IEA 2012 Program from day to day

Sunday, 12 February

6:30 – 8:30pm
Opening ceremony Guararapes Auditorium
- Welcome speech by the congress chair and IEA President and the Best Paper Award ceremony.
- Best Paper Award Ceremony, by David Caple, IEA Past President and Award Chair.
- Keynote speech: “Micro- and Macroergonomics of Complex, Large-Scale Technological Systems Accidents: From the Three Mile Island of 1979 to the BP Deepwater Horizon 2010”, by Dr. Najmedin Meshkati, University of Southern California.
- Congress show: Orchestra of Maestro Spok with music and dances from the Northeast of Brazil, particularly, the State of Pernambuco.

Monday, 13 February

Technical Committee Meetings

Time: 08:30am – 10:30am
Room 11 - Anthropometry
Room 12 - Activity Theories for Work Analysis and Design
Room 13 - Ergonomics for Children and Educational Environments
Room 14 - Aerospace Human Factors and Ergonomics
Room 16 - Human Simulation and Virtual Environments

Workshops

Time: 08:30am – 12:45pm
Room: 06

W 01 Digital human modelling standardization
   Gunther Paul, University of South Australia and Sascha Wischniewski, BAUA, Germany

Room: 07

W 02 Innovations in patient handling for the ambulance industry
   Chris Fitzgerald, Risk & Injury Management Services Pty Ltd, Australia

Room: 08
W 03  Understanding complexity and nonlinear dynamics of human-system interactions: theory and applications
Waldemar Karwowski, University of Central Florida, United States

Room: 09

W 04  Colour, design and ergonomics
Fernando Moreira da Silva, Cristina Pinheiro and Ana Moreira da Silva, Technical University of Lisbon, Portugal

Symposiums
1:00 – 2:30pm

Room: 13

S01 - Warning Symposium Session 1: Technology-Based Warnings and Auditory Alert Characteristics
Chair: Christopher B. Mayhorn, Co-chair: Michael S. Wogalter

Training time estimation to improve alarm reactions
James P. Bliss, Rachel Liebman and Eric Chancey, Old Dominion University, USA

Multimodal urgency coding: auditory, visual, and tactile parameters and their impact on perceived urgency
Carroll L. Baldwin, Jesse L. Eisert, Andre Garcia, Bridget Lewis, Stephanie M. Pratt and Christian Gonzalez, George Mason University, USA

Selection of a voice for a speech signal for personalized warnings: the effect of speaker’s gender and voice pitch
Sheron Machado, Emília Duarte, Júlia Teles Lara Reis and Francisco Rebelo, Technical University of Lisbon, Portugal, Institute of Arts, Design and Marketing, Portugal

Auditory backup alarms: distance-at-first-detection via in-situ experimentation on alarm design and hearing protection effects
Khaled Alali and John Casali, Kuwait University, Kuwait; Virginia Tech, USA

The impact of emotions and predominant emotion regulation technique on driving performance
G. M. Hancock, P. A. Hancock and C.M. Janelle, University of Central Florida, USA

Virtual reality based therapy for post operative rehabilitation of children with cerebral palsy
Deepak Sharan, PS Ajeesh, R Ramesh kumar, M Mathankumar, R Jospin Paulina and M Manjula, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Room: 14

S04 - Ergonomics and Education
Chair: Francisco Nunes, Co-Chair: Marcelo Soares

Ergonomics content in the physical education teacher’s guide in Rwanda
Manobhiram Nellutla, Hetal Patel, Aline Kabanda and Assuman Nuhu, Kigali Health Institute, Rwanda

International english and ergonomics: a romance in the making?
Roddy Kay, Cambridge ESOL Centre, Brazil
Physical and postural aspects of teachers during work activity
Nilson Rogério da Silva and Maria Amélia Almeida, Paulista State University, Federal University of São Carlos, Brazil

The deaf and the classroom design: a contribution of the built environmental ergonomics for the accessibility
Laura Bezerra Martins and Denise Maria Simões Freire Gaudiot, Federal University of Pernambuco, Brazil

Cross-disciplinary Problem-solving Workshop: a pedagogical approach to anticipate ergonomist engineering design collaboration
Elisabeth Brunier, Michel Le Chapellier and Pierre Henri Dejean, Compiègne University of Technology, France

Room: 15

S07 - Human Factors and Ergonomics in the Building and Construction Industry 1
Chair: Peter Hoonakker, Co-chair: Henk van der Molen

Relationship between construction workers' musculoskeletal disorders and occupational health service activities
Savinainen Minna and Nyberg Mika, Finnish Institute of Occupational Health, Finland

Flow diagram analysis of electrical fatalities in construction industry
Chia-Fen Chi, Yuan-Yuan Lin and Mohamad Ikhwan, National Taiwan University of Science and Technology, Taiwan

Predicting long-term absenteeism from work in construction industry: a longitudinal study
Peter Hoonakker and Cor van Duivenbooden, University of Wisconsin-Madison, USA; Arbouw, Dutch National Institute for Safety and Health in the Construction Industry, The Netherlands

The evaluation of team lifting on physical work demands and workload in ironworkers
Henk F. van der Molen, Steven Visser, P. Paul F.M. Kuijer, Gert Faber, Marco J.M. Hoozemans, Jaap H. van Dieën, Monique H.W. Frings-Dresen, University of Amsterdam, Arbouw, VU University, The Netherlands; Harvard School of Public Health, Liberty Mutual Research Institute for Safety, USA

Assessment method of accessibility conditions: how to make public buildings accessible?
Isabela Fernandes Andrade and Vera Helena Moro Bins Ely, Federal University of Santa Catarina, Brazil

Room: 16

S10 - Systems Ergonomics
Chair: John Wilson

Dynamic systems approach as basis for human oriented design
Ralph Bruder, Technical University of Darmstadt, Germany

Systems approaches to risk assessing healthcare, how far have we come?
Peter Buckle, Robens Institute, University of Nottingham, England

Sociotechnical systems approach to healthcare quality and patient safety
Pascale Carayon, University of Wisconsin-Madison, USA

Performance-based management and quality of work: an empirical assessment
Pierre Falzo, Adelaide Nascimento, Corinne Gaudart, Cécile Piney, Marie-Anne Dujarier, Jean-François Germe, National Conservatory of Arts and Crafts, France
Fundamentals of systems ergonomics
John R Wilson, University of Nottingham, UK

Room: 17

S13 - Contribution for IEA/WHO toolkit for WMSDs prevention 1: General contributions for a IEA/WHO toolkit devoted to MSD prevention
Chair: David Caple, Co-chair: Enrico Occhipinti

A toolkit for MSDs prevention - WHO and IEA context
David C Caple, Past President of the International Ergonomics Association, Australia

Conceptual framework for development of a toolkit for prevention of work-related musculoskeletal disorders
Wendy Macdonald, La Trobe University, Australia

Enrico Occhipinti, Daniela Colombini, Foundation Policlinico Ca’Granda, Don Gnocchi Foundation, Italy

Categorizing job physical exposures using simple methods
Stephen Bao and Barbara Silverstein, Washington State Department of Labor and Industries, USA

Development of good practices database of European regions for prevention of work related musculoskeletal disorders: TIAM project
H Achleitner, E Álvarez-Casado and B Zhang, TZ PERG, Austria, Technical University of Catalunya, Spain

Parallel Sessions

Time: 01:00pm – 02:30pm

Room: 01

S-ATWAD 01 - Innovation and Health

New working conditions and consequences on activity of home healthcare workers
Corinne Van De Weerdt and René Baratta, INRS,L’ouvre Boîte, France

Innovation in the occupational health physician profession requires the development of a work collective to improve the efficiency of MSD prevention
S.Caroly, A. Landry, C.Cholez, P. Davezies, M. Bellemare, N. Poussin; University of Grenoble, University of Lyon, University Laval, CNAM, France

Efficiency of personal protective equipment used in agriculture
Luiz Antônio Meirelles, Marcelo Motta Veiga, Francisco José de Castro Moura Duarte, Federal University of Rio de Janeiro, Oswaldo Cruz Foundation, Brazil

The use of pesticides in French viticulture: a badly controlled technology transfer
Garrigou Alain, Isabelle Baldi and Jackson Marçal, University Bordeaux, France, Fundacentro, Brazil

Can activity be understood out of subjectivity?
F. Hubault and L. Sznelwar, University of Paris 1 Panthéon – Sorbonne, France, University of São Paulo, Brazil
Room: 02

S-APD 01 - Affective Product Design 1

A first empirical investigation into the pleasure of control as explaining factor in usage durations of information systems
Michaela Kauer and Ralph Bruder, Technical University of Darmstadt, Germany

Subjective and objective evaluation of sense of space for vehicle occupants based on anthropometric data
Pitarn Hiamtoe, Florian Steinhardt, Uwe Köhler and Klaus Bengler, BMW AG, Technical University of Munich, Germany

The effect of system aesthetics on trust, cooperation, satisfaction and annoyance in an imperfect automated system
Alona Weinstock, Tal Oron-Gilad and Yisrael Parmet, Ben-Gurion University of the Negev, Israel

The perception of fear when using urban furniture
Gabriela Pizzato, Lia Guimarães and Arlei Damo, Federal University of Rio Grande do Sul, Brazil

Personality of social robots perceived through the appearance
Benedict Tay Tiong Chee, Park Taezoon, Qianli Xu, Jamie Ng and Odelia Tan, Nanyang Technological University, Agency for Science, Technology and Research, Singapore

Room: 03

S-Aging 01 - Working Late

A individually tailored programme decreased long-term sickness absence among aging food factory workers
C Nygard, A Siukola, H Huhtala, P Virtanen, University of Tampere, Finland

Physical workload and thoughts of retirement
Merja Perkiö-Mäkelä and Maria Hirvonen, Finnish Institute of Occupational Health, Finland

Ergonomics of bridge employment
Mokdad Mohamed, Bahrain University, Bahrain

High work ability in the scientific activity of older and experienced academics
Ülo Kristjuhan and Erika Taidre, Tallinn University of Technology, Estonia

Work ability among nursing personnel in public hospitals and health centers in Campinas – Brazil
Inês Monteiro, Manuela de Santana Chillida and Luciana Contrera Moreno, University of Campinas, Federal University of Mato Grosso do Sul, Brazil

Company Case Studies

Time: 01:00pm – 02:30pm

Room: 04

CCS01 – Company Case Studies: Introduction and cases from Aviation
Chair: Ruud Pikaar
Ergonomics in projects
Ruud Pikaar, ErgoS Engineering and Ergonomics, The Netherlands

Moving a safety critical organization to achieve ergonomic risk control
Lizzy Smith, Airservices Australia, Australia

The Boeing 787 Dreamliner program: design for manufacturing ergonomics
Richard J. Gardner, Boeing Research & Technology, USA

Airport baggage handling – where do human factors fit in the challenges that airports put on a baggage system?
Odeke Lenior, Vanderlande Industries B.V., The Netherlands

Ergonomic work analysis of Airbus pilots job in Brazil
Tathiana Passeri Monteiro, Diego Cesar Marques, Victor Gonçalves Barbosa and Priscila Uatanabe, Federal University of Rio de Janeiro, Brazil

Parallel Sessions

Time: 01:00pm – 02:30pm
Room: 06

S-EAWT 01 – Physical Demand at Work 1

Ergonomic analysis of work in a small corporation
I Branco, M Rodrigues, L Almeida, B Rodrigues, J Shimioshi, E Rodrigues, Brasilia University, Brazil

A polynomial equation to predict low back compression force: accounting for the effects of load height on instability
Inger Christina Calder and Jim R. Potvin, Mayo Clinic, USA, McMaster University, Canada

Interaction between employees' physical load factors and early support at the workplace
Simo Kaleva, Johanna Turja, Marketta Kivistö, and Jorma Seitsamo, Finnish Institute of Occupational Health, Finland

An equation to predict maximum acceptable loads for repetitive tasks based on duty cycle: evaluation with lifting and lowering tasks
Jim R. Potvin, McMaster University, Canada

Ergonomic intervention in Aonla pricking operation during preserve preparation in food processing industries
Arpana Rai, Sudesh Gandhi, Nitin Kumar, D.K.Sharma and M.K.Garg, COHS, CCSHAU, India

Room: 07

S-EAWT 04 – Ergonomic Assessment at Work 1

Is there enough information to calculate the financial benefits of ergonomics projects?
M Pereira da Silva, C Prüfer, F G Amaral, Federal University of Rio Grande do Sul, Brazil, University of Minho, Portugal

Evaluating the effectiveness of ergonomics application
Evidence-based ergonomics: a model and conceptual structure proposal
Dierci Marcio Silveira, Fluminense Federal University, Brazil

Justaposing a model of tasks with an appropriate model of social functioning – implications for how we approach socio-technical systems when accounting for safety and resilience
Kenneth Pettersen, University of Stavanger, Norway

Ergonomic evaluation of a situation of co-exposure to solvents and noise in a printing of flexible packaging
A Mhamdi, A Ben Amor, A Amri, I Youssef, N Ladhari, R Gharbi, Université Tunis ElManar, Tunisie

The utilization of infrared imaging for occupational disease study in industrial work
Marcos Leal Brioschi, Maria Lúcia Leite Ribeiro Okimoto and José Vriati Coelho Vargas, Federal University of Parana, Brazil

Room: 05

S-ECED 01 - Children, Technology & the Environment

Usability testing with children: an application of Pedactice and Ticese methods
Alessandra Carusi and Cláudia Mont’Alvão, Pontifical Catholic University of Rio de Janeiro, Brazil

Evaluation of students phoning, texting and/or web surfing while crossing streets
L Schulze, University of Houston, USA

Comparison of postural evaluation and self-report questionnaire among schoolchildren in school workshop
A Md Hashim, University of Malaya, Malaysia

Ergonomic evaluation of postural stress in school workshop
Adila Md Hashim, Siti Zawiah Md Dawal and Nukman Yusoff, University of Malaya, Malaysia

Usability issues in learning management systems (LMS)
Maria Isabella de Porto Alegre Muniz and Anamaria de Moraes, Pontifical Catholic University of Rio de Janeiro

Room: 08

S-EinD 01 - Methods for the Ergonomic Design

Embedded systems engineering for products and services design
Tareq Z. Ahram, Waldemar Karwowski and Marcelo M. Soares, University of Central Florida, USA, Federal University of Pernambuco, Brazil

Integrating ergonomics in design processes: A case study within an engineering consultancy firm
Lene Bjerg Sørensen and Ole Broberg, Technical University of Denmark, ALECTIA, Denmark

Questionnaire survey of customer satisfaction for product categories towards certification of ergonomic quality in design
Masaaki Mochimaru, Miwako Takahashi, Nobuko Hatakenaka and Hitoshi Horiuchi, Digital Human Research Center, Research Institute of Human Engineering for Quality Life, Delphs Inc., Japan

Product functions: interfaces with ergonomic design
Lívia F. de A. Campos, Jamille N. de L. Lanutti and Luis Carlos Paschoarelli, Paulista State University, Brazil
Kaizen and Ergonomics: the perfect marriage  
Martin Antonio Rodriguez and Luis Fernando Lopez, Toyota Argentina S.A., Argentina

Similar methodological analysis involving the user experience  
Caio Márcio Almeida e Silva, Maria Lúcia R. L. Okimoto and Raffaela Leane Zenni Tanure, Federal University of Parana, Federal University of Rio Grande do Sul, Brazil

Room: 09

S-EinD 04 – Ergonomics and Design for Usability 2

Usability in product design - the importance and need for systematic assessment models in product development – usa-design model (U-D) ©  
Giselle Schmidt Alves Díaz Merino, Clarissa Stefani Teixeira, Rodrigo Petry Schoenardie, Eugenio Andrés Diáez Merino and Leila Amaral Gontijo, Federal University of Santa Catarina, Brazil

Common criteria for usability review  
Victor Nassar, Federal University of Parana, Brazil

Usability Analysis of Industrial cooking equipment  
Alexana Vilar Soares Calado and Marcelo M. Soares, Federal University of Pernambuco, Brazil

Study of the use of ergonomic principles of usability in Brazilian technical standards respect to products of reducing water consumption  
R Porto, J van der Linden, Federal University of Rio Grande do Sul, Brazil

The methodological involvement of the emotional design and cognitive ergonomics as a tool in the development of children products  
Walter Correia, Lais Rodrigues, Fabio Campos, Marcelo M. Soares, Marina Barros, Federal University of Pernambuco, Brazil

Room: 10

S-HEALTH 01 - Systems Approach to Healthcare  
Chair: Michelle M. Robertson, Co chair: Ayse P. Gurses

Fuzzy modeling and efficiency in health care systems  
Ahmet F. Ozok, Istanbul Culture University, Turkey

Using human factors engineering to improve patient safety in the cardiovascular operating room  
Ayse P. Gurses, Elizabeth A. Martinez, Laura Bauer, George Kim, Lisa H. Lubomski, Jill A. Marsteller, Priyadarshini R. Pennathur, Chris Goeschel, Peter J. Pronovost and David Thompson, Johns Hopkins University School of Medicine, Bloomberg School of Public Health, Harvard University, The Johns Hopkins School of Nursing, USA

Workaround identification as an instrument for work analysis and design: a case study on e-prescription  
Polyxeni Vassilakopoulou, Vassilis Tsagkas and Nicolas Marmaras, National Technical University of Athens, Greece

Characterizing complexity in socio-technical systems: a case study of a SAMU Medical Regulation Center  
Angela Weber Righi, Priscila Wachs and Tarcisio Abreu Saurin, Federal University of Rio Grande do Sul, Brazil

Examination of comptuer task exposures in radiologists: a work systems approach
Ergonomic assessment among radiology technologists: a survey in a hospital
Fernando Lima Pais, Paulo Roberto Azevedo, Lícia Helena de Oliveira Medeiros, Irai Borges de Freitas and Cláudia Stamato, Pontifical Catholic University of Rio de Janeiro, Catholic University of Brasília, Oswaldo Cruz Foundation, Brazil

Room: 11

S-MSDs 01 - Methods and tools for WMSDs prevention with a special attention to economic issues
Chair: Sven Erik Mathiassen

Musculoskeletal disorders: a new approach
Kamiel Vanwonterghem, Pongjan Yoopat, Christophe Maes, Cergo International, Mensana, Belgium, Rangsit University, Thailand

Proper manual handling techniques to prevent low back pain, a cochrane systematic review
Jos H. Verbeek, Kari-Pekka Martimo, P. Paul F.M. Kuijer, Jaro Karpinen, Eira Viikari-Juntura, Esa-Pekka Takala, Finnish Institute of Occupational Health, Finland, University of Amsterdam, The Netherlands

Modeling costs of exposure assessment methods in industrial environments
Catherine Trask, Svend Erik Mathiassen, Jens Wahlström, Marina Heiden, Mahmoud Rezagholi, University of Gävle, Umeå University, Sweden

Cost-efficient observation of working postures from video recordings – more videos, more observers or more views per observer?
Svend Erik Mathiassen, Per Liv and Jens Wahlström, University of Gävle, Umeå University, Sweden

The trade-off between meticulousness and methodological variance in normalization of low back EMG
Jennie Jackson and Svend Erik Mathiassen, University of Gävle, Sweden

The economic evaluation of a Participatory Ergonomics programme to prevent low back and neck pain
Maurice Driessen, Judith Bosmans, Karin Proper, Johannes Anema, Paulien Bongers, Allard van der Beek, Research Center Physical Activity, Work and Health, VU University, TNO Quality of Life, The Netherlands

Room: 12

S-Saf&Hth 01 - Health Care & Safety at Work

Interventions to improve patient safety in transitional care – a review of the evidence
Kristin Laugaland, Karina Aase and Paul Barach, Forde Hospital, University of Stavanger, Norway, Utrecht University Medical Center, Netherlands

Improvement of the human-computer interaction of an ambulatory computerized order entry system
J Xiao, E Wang, S Poon, National Tsing Hua University, Taichung Veterans General Hospital, Taiwan

Radiological emergency response for community agencies with cognitive task analysis, risk analysis, and decision support framework
J Lambert, University of Virginia, USA

Supporting the scholar role in intensive care nursing
M. Melles, A. Freudenthal, H. de Ridder, Delft University of Technology, The Netherlands
Handover Process: how to Improve quality and safety through an ergonomic solution
Giulio Toccafondi, Sara Albolino, Tommaso Bellandi and Francesco Venneri, Patient Safety and Clinical Risk Management Tuscany Region, Clinical Risk Management Unit, Italy

The actuation of Physiotherapy in the certifications of occupational quality, health and safety
Helenara Salvati Bertolossi Moreira, Bruna Talini, Isabele Maia Galvão, José Mohamud Vilagra, Eduardo Gallas Leivas and Abel Santos de Oliveira Júnior, State University of West of Paraná, Brazil

Special Sessions
Time: 01:00pm – 02:30pm
Brum Auditorium
SS01 - The new challenges of future vehicle HMI design, towards safer and positive experiences
F Chen and A Sundin

Ribeira Auditorium
SS02 - DHM vendor special session
Gunther Paul and Thomas Alexander, University of South Australia, Fraunhofer-FKI, Germany

Symposiums
Time: 02:30pm – 04:00pm
Room: 13
S02 Warning Symposium Session 2: Litigation and Warnings: The Role of an Expert Witness
Chair: Michael S. Wogalter, Co-chair: Christopher B. Mayhorn

Warnings on defibrillators: a case study
Vicki R. Lewis and Rollin J. Fairbanks, MedStar Institute for Innovation, USA

Ratings checklist for warnings: a prototype tool to aid experts in the adequacy evaluation of proposed or existing warnings
David R. Lenorovitz, S. David Leonard and Edward W. Karnes, LENPRO Services, Inc., University of Georgia, Edward W. Karnes, LLC, USA

Tire aging: a human factors analysis of failure to warn and inform
Michael S. Wogalter and Kenneth R. Laughery, North Carolina State University, Rice University, USA

Ride-on lawnmowers warnings: slope measurements and safety-by-separation
Edward W. Karnes, S. David Leonard and David R. Lenorovitz, Edward W Karnes, LLC., University of Georgia, LENPRO Services, Inc., USA

What should I do? – a study about conflicting and ambiguous warning messages
Emília Duarte, Francisco Rebelo, Júlia Teles and Paulo Noriega, Institute of Arts, Design and Marketing, Technical University of Lisbon, Portugal

Room: 14
S05 Ergonomics and Education
Chair: Francisco Nunes, Co-chair: Marcelo Soares

Integrating community ergonomics with educational ergonomics – designing community systems to support classroom learning
Thomas J. Smith, University of Minnesota, USA

Ergonomic analysis for elementary school teachers. Preliminary trial for elementary schools in the Province of Buenos Aires
Gabriela Cuenca and Patricio Nusshold, National Technological University, University of Buenos Aires, Argentina

Analysis of environmental factors affecting the quality of teacher’s life of public schools from Umuarama
Bruna Evellyn Costa and Nicéia Luzia Selete Silva, Paranaense University, Brazil

Effectiveness of classroom ergonomic training for VDT workers in knowledge sector!
B Jajoo, B and D B R, ErgoWorks Inc, India

Ergonomics and education as a strategy for sustainable development in business
Dierci Marcio Silveira and Érico Lourenço Brandão, Fluminense Federal University, Brazil

Burnout syndrome, working conditions, and health: a reality among public high school teachers in Brazil
Ângela Maria C. Santana, Dione De Marchi, Luiz C. G. Junior, Yassana M. Girondoli and Andrés Chiappeta, Federal University of Viçosa, Brazil

Room: 15

S08 Human Factors and Ergonomics in the Building and Construction Industry 2
Chairs: Henk van der Molen and/or Paul Kuijer

Ergonomic analysis of the use of open-plan offices in Brazilian public sector offices
Ana Paula Lima Costa and Vilma Villarouco, Federal University of Pernambuco, Brazil

Study and analysis of occupational risk factors for ergonomic design of construction worksystems
Ratri Parida and Pradip Kumar Ray, Indian Institute of Technology Kharagpur, India

Evidence-based exposure criteria for work-related musculoskeletal disorders as a tool to assess physical job demands
P. Paul F.M. Kuijer, Henk F. van der Molen and Monique H.W. Frings-Dresen, University of Amsterdam, Arbouw, The Netherlands

Construction and application of an indicator system to assess the ergonomic performance of large and medium-sized construction companies
Isabela Xavier Barbalho Bezerra and Ricardo José Matos de Carvalho, Federal University of Rio Grande do Norte, Brazil

Outcomes of a revised apprentice carpenter fall prevention training curriculum
Bradley Evanoff, Vicki Kaskutas, Ann Marie Dale, John Gaal, Mark Fuchs and Hester Lipscomb, Washington University, Carpenters Joint Apprenticeship Program, Duke University, USA

Room: 16
S11 Ergonomics and design for sustainability
Chair: Klaus J. Zink, Co-chair: Giuseppe Di Bucchianico

Strategies and arguments of ergonomic design for sustainability
Antonio Marano, Giuseppe Di Bucchianico and Emilio Rossi, University of Chieti-Pescara, Italy

Toward a transdisciplinary approach of ergonomic design for sustainability
Giuseppe Di Bucchianico, Antonio Marano and Emilio Rossi, University of Chieti-Pescara, Italy

Ergonomics and sustainability in the design of everyday use products
Francesca Tosi, University of Florence, Italy

Sustainability and accessibility: the design for all approach
Isabella Steffan, Studio Steffan - Design & Research, Italy

Ergonomics and sustainability in healthcare: ambient assisted living and the social-environmental impact of patients lifestyle
Giuseppe Andreoni, Pelin Arslan, Fiammetta Costa, Sabrina Muschiato and Maximiliano Romero, Politecnico di Milano, Italy

Room: 17

S14 Contribution for IEA/WHO toolkit for WMSDs prevention 2: Experiences in using simple tools for biomechanical risk assessment in craftwork, small industries and difficult sectors with high task variability
Chair: Daniela Colombini, Co-chair: Ruddy Facci

A simple tool for preliminary hazard identification and quick assessment in craftwork and small/medium enterprises (SME)
Daniela Colombini, Enrico Occhipinti, G. Di Leone G., Don C. Gnocchi Foundation, Policlinico Ca’ Granda Foundation, National Health Unit, Italy

Hazard identification and pre-map with a simple specific tool: synthesis of application experience in handicrafts in various productive sectors
Daniela Colombini, Enrico Occhipinti, Raffaele Peluso, Loretta Montomoli and Marco Placci, Don C. Gnocchi Foundation, Policlinico Ca’ Granda Foundation, CESMEL, University of Siena, Italy

Biomechanical overload in multiple tasks with weekly and annual cycle: practical experiences in the field of cleaning and packaging of fruit
Daniela Colombini and Enrico Occhipinti, Don C. Gnocchi Foundation, Policlinico Ca’ Granda Foundation, Italy

Study of biomechanical overload in urban gardeners of Barcelona: application of analytical models for risk exposure evaluation in annual working cycle
Enrique Alvarez-Casado, Aquiles Hernandez-Soto, Sandoval Tello and Rosa Gual, Polytechnical University of Catalunya, Center for Applied Ergonomics, Spain

Application of the OCRA Method in the sugar cane harvest and its repercussion on the workers’ health. Preliminary study
Facci Ruddy, Marcatto Eduardo and Santino Edoardo, Escola OCRA Brasiliana, Brazil

Parallel Sessions

Time: 02:30pm – 04:00pm
Room: 01

S-ATWAD 02 - Innovation and Organization

Evolving networks and the logics of fluency in rail traffic control
L Seppanen, Finnish Institute of Occupational Health, Finland

Contributions of ergonomics to the construction of bus drivers health and excellence in public transport and at work
Claudio Brunoro, Laerte Idal Sznelwar, Ivan Bolis and Julia Abrahao, University of Sao Paulo, Brazil

The 193 call center, a meaningful public service!
Maud Eickhoff and Laerte Idal Sznelwar, University of Sao Paulo, Brazil

Organization of work in interaction between the paramedics and the patient
Petra Auvinen and Hannele Palukka, University of Tampere, Finland

Working in verticalized platform vessel: an ergonomic approach in the oil industry
Luciano Garotti and Fausto Mascia, CENPES - Petrobras, University of Sao Paulo, Brazil

Room: 02

S-APD 02 - Affective Product Design 2

Usability and the emotional relationships in collective buying sites: a case study.
J. E. Silveira, T. P. Anjos and L. A. Gontijo, Federal University of Santa Catarina, Brazil

The perception of pleasantness in a product of collective use: the bus shelter
Gabriela Pizzato, Lia Guimarães and Carla ten Caten, Federal University of Rio Grande do Sul, Brazil

Protection or pleasure: female footwear
Mariana Seferin and Júlio van der Linden, Federal University of Rio Grande do Sul, Brazil.

Comfort model for automobile seat
Lizandra da Silva, Silvana Ligia Vincenzi Bortolotti, Izabel Carolina Martins Campos and Eugenio Andrés Diaz Merino, Federal University of Santa Catarina, Technological Federal University of Paraná, State Secretary of Administration's Office, Brazil

Room: 03

S-Aging 02 - Usage and usability

Mobile phones and elderly people: a noisy communication
Cláudia Stamato and Anamaria de Moraes, Pontifical Catholic University of Rio de Janeiro, Brazil

Application and analysis of the affinities diagram on the examination of usability problems among older adults
José Guilherme Santa-Rosa and Heloisa Fernandes, Federal University of Rio Grande do Norte, Brazil

Comparing the usage of personal computers and multitouch tablets for older adults: findings from a field study, new opportunities and challenges for ergonomics research and applications
C Vandi, L Duarte and C Tijus, Université Paris 8-Saint Denis, France

Development of guidelines for designing appliances for older persons
Process of precocious functional aging in workers of laundries
Simone Caldas Tavares Mafra, Celina Angélica Lisboa Valente Carlos and Vania Eugênia da Silva, Federal University of Viçosa, Brazil

Room: 06

S-EAWT 02 – Physical Demand at Work 2

Assessment of physical workload in boiler operations
Valéria Antônia Justino Rodrigues, Camila Soares Braga, Julio César Costa Campos, Amaury Paulo de Souza, Luciano José Minette, Guilherme Luciano Sensato, Angelo Casali de Moraes and Emília Pio da Silva, Federal University of Viçosa, Brazil

Physical Demands during the hauling of fishing nets for artisan fishing using rafts in beach of Ponta Negra, Natal-Brasil
Anelena Jaeschke and Maria Christine Werba Saldanha, Federal University of Rio Grande do Norte, Brazil

Scapular positioning assessment and level of disability of ultrasonographers
G Moraes and D Mendes, Federal University of Itajubá, Brazil

Validation of preventive ergonomics measurements for process generating of repeating occupational musculoskeletal disease
P Hernandez, Mutual Security Chilean Chamber of Construction, Chile

The effects of functional limitations on soldier common tasks
John R. Bacon, Thomas J. Armstrong and Teresa L. Brininger, United States Military Academy, University of Michigan, Telemedicine and Advanced Technology Research Center, USA

Physical workload during firefighting in Chilean volunteers
Javier A. Freire Herrera, Felipe E. Meyer Cohen and Elías S. Apud Simón, University of Concepcion, Chile

Room: 07

S-EAWT 05 – Ergonomic Assessment at Work 2

Three years of the OCRA methodology in Brazil: critical analysis and results
Ruddy Facci, Eduardo Marcatto and Edoardo Santino, Escola OCRA Brasiliana, Brazil

Correlation of ergonomic risk factors with RULA in IT professionals from India
Deepak Sharan and PS Ajeesh, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Remote online ergonomic assessment in the office environment as compared to face-to-face ergonomic assessment
Levy Eyal, Joseph Ribak and Yehuda Badihi, Tel-Aviv University, Sackler Faculty of Medicine, School of Public Health, Jerusalem College of Technology - Majon Lev (JCT), Israel

Performance indicators of work activity
Manoela de Assis Lahoz and João Alberto Camarotto, Federal University of Sao Carlos, Brazil

Evaluation and control of ergonomics actions in federal public service: the case of FIOCRUZ - RJ
Simone L. Santa Isabel Ricart, Mario Cesar Rodriguez Vidal and Renato José Bonfatti, Oswaldo Cruz Foundation, Federal University of Rio de Janeiro, Brazil
Analysing domestic activity to reduce household energy consumption
Myriam Fréjus and Julien Guibourdenche, Electricity of France Research and Development, University of Lyon, France

Room: 05

S-ECED 02 - Children’s Computer Use

A proposed model representing the relationships between user characteristics, computer exposure and musculoskeletal symptoms in children
C Harris, L Straker, A Smith and C Pollock, Curtin University, Australia

Children computer mouse use and anthropometry
Erin E. Hughes and Peter W. Johnson, University of Washington, USA

Promoting healthy computer use among middle school students: a pilot school-based health promotion program
Marina Ciccarelli, Linda Portsmouth, Courtenay Harris and Karen Jacobs, Curtin University, Australia, Boston University, USA

An ergonomic study on the biomechanical consequences in children, generated by the use of computers at school
Claudia Paraizo and Anamaria de Moraes, Pontifical Catholic University, Federal University of Rio de Janeiro, Brazil

Primary school children’s knowledge of, and attitudes towards, healthy computer use
T Tran and M Ciccarelli, Curtin University, Australia

Room: 08

S-EinD 02 - Ergonomics and User-Centered Design

Designing with Users to meet people needs: a teaching model
Laura Anselmi, Marita Canina and Elisabetta Coccioni, Polytechnic of Milan, Italy

The importance of User Centered Design methods applied to the design of a new workstation: a case study
Ronaldo Duschenes, Andressa Mendes, Adriana Betiol and Suzana Barreto, Flexiv Móveis, Interfácil Usabilidade de Sistemas Ltda, State of Londrina University, Brazil

Does the designers knowledge and experience in ergonomic principles and methods and user centred design methods result in using these principles and methods in the design process?
B Kok, Katholieke Universiteit Leuven, Belgium

The amount of ergonomics and user involvement in 151 design processes
Barbara N.E.Kok, Karin Slegers and Peter Vink, Media Arts and Design Academy, IBBT-K.U.Leuven Future Health Department, Belgium, Delft University of Technology, The Netherlands

VoiceYourView: Anytime, anyplace, anywhere user participation
Andree Woodcock, Katerina Frankova and Laurence Garton, Coventry University, UK

A methodology for connecting User Centered Design (UCD) with Eco-design. The possibility of migration of products to services based on the user acceptance
Rodea Chávez Alejandro and Lucila Mercado Colin, Autonomous National University of México
Room: 09

S-EinD 05 – Ergonomics and Emotional Design

Emotion and interior space design: an ergonomic perspective
Swathi Matta Reddy, Debkumar Chakrabarti and Sougata Karmakar, Indian Institute of Technology Guwahati, India

Aesthetic taste versus utility: the emotional and rational of the individual
Claudia Mourthé and Pierre-Henri Dejean, Federal University of Rio de Janeiro, Brazil, UTC, France

Infant feeding: the interfaces between interaction design and cognitive ergonomics in user-centered design
Flavia Lima and Lilian Kely Araújo, Federal University of Minas Gerais, Pontifical Catholic University of Minas Gerais, Brazil

Product evaluation based in the association between intuition and tasks
Caio Márcio Almeida e Silva, Maria Lúcia L. R. Okimoto, Deise Albertazzi, Cyntia Calixto, Humberto Costa, Federal University of Parana, University Center of Curitiba, Brazil

Design of experiment with emphasis on intuitive use
Caio Márcio Almeida e Silva and Maria Lúcia R. L. Okimoto, Federal University of Parana, Brazil

Design for reflection
Sebastiano Bagnara and Simone Pozzi, University of Sassari-Alghero, Deep Blue srl, Italy

Room: 10

S-HEALTH 02 - Organizational Ergonomics In Healthcare 1
Chair: Salerno Silvana, Co-chair: P Waterson

Care Giving and nursing, work conditions and Humanidade®
Sylvain Biquand and Benoit Zittel, Abilis ergonomie, Anthropie, France

Ergonomics in the psychiatric ward towards workers or patients?
Silvana Salerno, Laura Forcella, Ursula Di Fabio, Irene Figà Talamanca, Paolo Boscolo, ENEA Casaccia, University of Chieti, University of Rome, Italy

Impact of ergonomics risk among workers in clothes central distribution service in a hospital
D. A. Sacouche, L.C. Morrone and J.S. Silva-Júnior, Santa Casa Medical Sciences School, Brazil

Impact of work organization in health and safety of nursing techniques in intensive care unit
Marcio Marçal and Claudia Mazzoni, Federal University of Health Sciences of Porto Alegre, FUMEC University, Brazil

Room: 11

S-MSDs 02 - Advanced Manufacturing Systems and WMSD Prevention
Chair: Natale Battevi

Lean production and work-related musculoskeletal disorders: overviews of international and Swedish studies
Mikael Brännmark and Malin Håkansson, Royal Institute of Technology, Linköping University, Sweden
An integrated tool to support engineers for WMSDs risk assessment during the assembly line balancing
Raffaele Di Benedetto and Michele Fanti, Italian Center for Ergonomics, Italy

Handwheel valve operation: assessment of four opening methods in terms of muscle loading, perceived comfort, and efficiency
Fereydoun Aghazadeh, Saif Al Qaisi, Francis Hutchinson, and Laura Ikuma, Louisiana State University, USA

Quantitative analysis of repetitive movement as a tool for diagnostic support in ergonomics
Paulo Antonio Barros Oliveira and Juliana Scopel, Federal University of Rio Grande do Sul, Brazil

Old Scissors to industrial automation: the impact of technologic evolution on worker’s health
Rita de Cassia Clark Teodoroski, Vanessa Mazzocchi Koppe and Eugênio Andrés Díaz Merino, Estácio de Sá Faculty of Santa Catarina, Federal University of Santa Catarina, Brazil

Room: 12

S-Saf&Hth 02 - Occupational Stress

Job strain in different types of employment affects the immune response
Paolo Boscolo, Laura Forcella, Marcella Reale, Giovina Vianale, Uliano Battisti, Roberta Bonfiglioli, Michela Cortini, Luca Di Giampaolo, Angela Di Donato and Silvana Salerno, University G. d’Annunzio of Chieti-Pescara, University of Chieti-Pescara, INAIL Abruzzo, L’Aquila, University of Bologna, Italy

Job stress and productivity increase
Samson Sunday Adaramola, Vine Tribometric Consultant, Nigeria

Burnout syndrome and Brazilian civil aviation: a short essay on the focus on prevention
M Castro and L Araujo, Gama Filho University, University of Sao Paulo, Brazil

Is occupational stress associated with work engagement?
Rosimeire Simprini Padula, Luciana Dias Chiavegato, Cristina Maria Nunes Cabral, Talita Almeida, Thais Ortiz and Rodrigo Luiz Carregaro, City of Sao Paulo University, Federal University of Mato Grosso do Sul, Brazil

Occupational stress and biomechanical risk in a high fashion clothing company
Laura Forcella, Roberta Bonfiglioli, Piero Cutilli, Andrea Antonucci, Angela Di Donato, Eugenio Siciliano, Michela Cortini, Francesco Saverio Violante and Paolo Boscolo, University G. d’Annunzio of Chieti-Pescara, University of Bologna, Ergoteam s.r.l., Regional Technical Advisory Risk Assessment and Prevention, Italy

Problems faced by cardiac patients on their pharmacological treatment: questionnaire application and results
V Lima and A de Mores, Pontifical Catholic University of Rio de Janeiro, Brazil

Company Case Studies

Time: 02:30pm – 04:00pm

Room: 04

CCS02 – Company Case Studies and health organizations

Transforming a hospital safety and ergonomics program: a four year journey of change
Integration of ergonomics in the prevention policy of a large university hospital
Kristien Selis, Hilde Vanacker, Veerle Hermans, Godewina Mylle, Herman Devriese and Kris Kerckhofs, IDEWE, Heverlee, Vrije Universiteit Brussel, University Hospital Leuven, Belgium

Return on investment of an on-site employee health clinic in multinational information technology company in India
D Deepak Sharan, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Design and implementation of a novel tool addresses the greatest cause of wrist injuries at Bayer Healthcare
Allen Yagjian, Bayer Healthcare, USA

Under the gaze of ergonomics: the weight of processes impacting on the health of a worker resources directorate
I Cunha, Federal University of Minas Gerais, Brazil

Special Sessions

Time: 02:30pm – 04:00pm

Brum Auditorium

SS03 –International network for junior researchers in ergonomics: a special meeting
François Palaci, Maria Sol Perez Toralla, Stanislas Couix, Vincent Boccara, Tamsyn Edwards, Claudia Krehl and Victoria Kendrick, Réseau des Jeunes Chercheurs en Ergonomie (RJCE), France, IEHF Early Career Researchers Special Interest Group, United Kingdom

Ribeira Auditorium

SS04 - Ergonomics for children
Kapila Jayaratne and Karen Jacobs, Ministry of Health, Sri Lanka, Boston University, USA

Symposiums

Time: 04:30pm – 06:00pm

Room: 13

S03 ErgoDesignForum: Ergonomics and Design Cooperation, fear, attraction, temptation 1
Chair: Pierre-Henri Dejean

Users/consumers differences regarding Ergonomics and Design theory and practice
Pierre-Henri Dejean and Peter Wagstaff, Université de Technologie de Compiègne, Centre of Resources and Innovation Mobility and Handicap, France

Designer could also be ergonomist?
Steve Vezeau, Université du Québec à Montréal, Canada

What dialogue tools could help ergonomist/designer/manager cooperation?
Jairo Drummond Camara and Fernando Oneto, State University of Minas Gerais, Brazil

**Aesthetics, what issues to ergonomics and design?**
Claudia Mourthè, Federal University of Rio de Janeiro, Brazil

**Is it necessary to include lectures about ergonomist designers cooperation**
Luz Mercedes Saenz, Pontificia Bolivariana University, Colombia

**EQUID IEA project to certify design process including ergonomics approached**
Ralph Bruder, Technical University of Darmstadt, Germany

Room: 14

**S06 Night, Shiftwork and Health effects**
Chair: Frida Marina Fischer

**Irregular working times and metabolic disorders among truck drivers: a review**
Elaine C Marqueze, Melissa A Ulhôa and Claudia R C Moreno, University of Sao Paulo, Brazil

**Need for recovery from work and sleep-related complaints among nursing professionals**
Aline Silva-Costa, Rosane Harter Griep, Frida Marina Fischer and Lúcia Rotenberg, FIOCRUZ, University of Sao Paulo, Brazil

**Morbidity among nursing personnel and its association with working conditions and work organization**
S Vasconcelos, E Marqueze, L Gonçalves, L Lemos, L Araújo, FM Fischer, CRC Moreno, University of Sao Paulo, Brazil

**Musculoskeletal reported symptoms among aircraft assembly workers: a multifactorial approach**
Fabrício Augusto Menegon and Frida Marina Fischer, Federal University of Itajubá, University of Sao Paulo, Brazil

**Work ability among hospital food service professionals: multiple associated variables require comprehensive intervention**
Frida Marina Fischer and Maria Carmen Martinez, University of São Paulo, Hospital Samaritano de Sao Paulo, Brazil

Room: 15

**S09 Human Factors and Ergonomics in the Building and Construction Industry 3**
Chairs: Vera Bins Ely, Co-chair: Paul Kuijer

**The impact of a ‘green’ building on employees’ physical and psychological wellbeing**
Andrew Thatcher and Karen Milner, University of the Witwatersrand, South Africa

**Casting an ergonomic eye on university libraries**
Nicole Ferrer and Vilma Villarouco, Federal University of Pernambuco, Brazil

**Using process evaluation to determine effectiveness of participatory ergonomics training interventions in construction**
Ann Marie Dale, Lisa Jaegers, Brian Buchholz, Laurie Welch and Bradley A. Evanoff, Washington University, Saint Louis University, University of Massachusetts Lowell, The Center for Construction Research and Training CPWR, USA

**Ergonomic aspects to be considered in planning public spaces destined for elderly people**
Marcella Viana Portela de Oliveira Cunha, Angelina Dias Leão Costa and Mariama da Costa Ireland, Federal University of Paraíba, Brazil

Anthropometric evaluation of internal horizontal circulation environments
Sadi Seabra and Bruno Barros, Federal University of Pernambuco, Brazil

Accessibility for all: going from theory to practice
Isabela Andrade, Vanessa Dorneles e Vera Helena Moro Bins Ely, Federal University of Santa Catarina, Brazil

Room: 16

S12 Human Factors and Ergonomics for Organizational Sustainability
Chair: Klaus J. Zink, Co-chair: Giuseppe Di Bucchianico

Early variability in the conceptualisation of “sustainable development and human factors”
Andrew Thatcher, University of the Witwatersrand, South Africa

Defining elements of sustainable work systems – a system-oriented approach
Klaus Fischer and Klaus J. Zink, University of Kaiserslautern, Germany

Ergonomics and sustainability – challenges from global supply chains
Peter Hasle and Per Langaa Jensen, National Research Centre for the Working Environment, Technical University of Denmark, Denmark

Shared services centers and work sustainability: which contributions from ergonomics?
Justine Arnoud and Pierre Falzon, National Conservatory of Arts and Crafts (CNAM), France

Ergonomic principles and tools for best interdisciplinary psycho-physical stress prevention
Luigi Dal Cason, Ecotarget Srl, Italy

Innovation in user-centered skills and performance improvement for sustainable complex service systems
Waldemar Karwowski and Tareq Z. Ahram, University of Central Florida, USA

Room: 17

S15 Contribution for IEA/WHO toolkit for WMSDs prevention 3: Experiences in applying tools for managing MSD with special reference to HARM and KIM tools
Chair: Tom Armstrong, Co-chair: Marjolein Douwes

Developing the Ontario toolbox for the prevention of MSDs
Richard Wells, Univertrsy of Waterloo, Canada

New risk assessment tools in The Netherlands
Heleen de Kraker and Marjolein Douwes, TNO, The Netherlands

New tools in Germany: development and appliance of the first two KIM (“lifting, holding and carrying” and "pulling and pushing") and practical use of these methods
Ulf Steinberg, Federal Institute for Occupational Safety and Health (BAuA), Division 3: Work and Health, Germany

Evaluation of objectivity, reliability and criterion validity of the Key Indicator Method for Manual Handling Operations (KIM-MHO), draft 2007
André Klußmann, Hansjürgen Gebhardt, Monika Rieger, Falk Liebers and Ulf Steinberg, Institute of Occupational Health Safety and Health, University Hospital of Tübingen, Germany
HARM overview and its application: some practical examples
Marjolein Douwes and Heleen de Kraker, TNO, The Netherlands

Development of a toolkit for managing MSD risk in healthcare sector workers
Jodi Oakman and Wendy Macdonald, La Trobe University, Australia

Parallel Sessions

Time: 04:30pm – 06:00pm
Room: 01

S-ATWAD 03 - Innovation and Production / Innovation and Risk

Contributions from the activity analysis to the products development project: case study based on a project of innovation and comfort in aircraft’s cabins
F M Greghi, N T Rossi, G B J Souza and L N Menegon, Federal University of São Carlos, Brazil

Design of educational artifacts as support to learning process
Adson Eduardo Resende, Flávio Henrique Vasconcelos, Federal University of Minas Gerais, Brazil

Contributions of ergonomics for a support education tool: methodology analysis
F Mascia, J Abrahao, U Montedo, A Fleury, University of Sao Paulo, Brasilia University, Brazil

Coordination and artifacts in joint activity: the case of tagging in high-risk industries
François Palaci, Geneviève Filippi and Pascal Salembier, EDF R&D, Université de Technologie de Troyes, France

The process of constructing new competencies in the family agricultural production unit
Uiara Bandineli Montedo, University of São Paulo, Brazil

Room: 03

S-Aging 03 – Telemedicine

A usability gap between older adults and younger adults on interface design of an Internet-based telemedicine system
Young J. Chun and Patrick E. Patterson, Texas Tech University, USA

A suggestion for future research on interface design of an Internet-based telemedicine system for the elderly
Young J. Chun and Patrick E. Patterson, Texas Tech University, USA

The relevance of temporal iconicity with instruction manuals for elderly users
Alexander Mertens, Claudia Nick, Stefan Krüger and Christopher M. Schlick, RWTH Aachen University, Germany

Elderly-technology interaction: accessibility and acceptability of technological devices promoting motor and cognitive training
Tiziana C. Callari, Silvia Ciairano and Alessandra Re, University of Turin, Italy

Age differences and transfer on control solution testing with blood glucometers
S-EAWT 03 – Physical Demand at Work 3

The cognitive ergonomics and the articulation of the functions of industrial products
Sabrina Talita Oliveira and Adriano Heemann, Federal University of Parana, Brazil

Physiological stress assessment of female workers at kitchen workstation
Hema Bhatt and M K Sidhu, G.B. Pant University of Agriculture & Technology, Punjab Agricultural University, India

Level of self-reported neck/shoulder pain and biomechanical workload in cleaners
Pascal Madeleine, Karen Søgaard, Andreas Holtermann and Afshin Samani, Aalborg University, University of Southern Denmark, National Research Centre for the Working Environment, Denmark

Workers’ postural conditions in the charcoal production process based on vertical metallic cylinders
Ivana Márcia Oliveira Maia and Antonio Carlos de Francisco, Federal Institute of Education, Science and Technology of Maranhão, Technological Federal University of Paraná, Brazil

Heavy physical work under time pressure: the garbage collection service – a case study
Ilza Mitsuko de Oliveira Camada, Silvana Maria Santos Pataro and Rita de Cássia Pereira Fernandes, Federal University of Bahia, Brazil

Room: 07

S-EAWT 06 – Methods for Ergonomic at Work

Ergonomic work analysis jobs in recovered factories
Gabriela Cuenca, Gastón Zotta and col., National Technological University, Argentina

From ergonomics to design specifications: contributions to the design of a processing machine in a tire company
A S P Moraes, P M Arezes and R Vasconcelos, University of Minho, University of Porto, Portugal

Assessment of managerial behavior in the correction of ergonomic problems at an airport
Anderson N. Lima and Valéria B. Gomes, State University of Rio de Janeiro, Brazil

Ergonomic considerations for a systemic approach: the Millenium Maize Mills Project in northern Mozambique
Ana Couvinhas, Patricia Ferrara, Denis Coelho, Sinezia Jorge and Jake Walter, TechnoServe Mozambique, Mozambique, University of Wisconsin-Madison, USA, University of Beira Interior, Portugal

Forensics ergonomics in Spain. Research priorities by the Delphi technique
F J Llaneza Alvarez, G Rosal Lopez, Elsa Peña Suarez and J Rodriguez Suarez, Forensic Ergonom, Ergonomics Consultant, University of Oviedo, Spain
Promoting ergonomics in Algeria: activities of “the research and training laboratory” in the University of Oran
Bouhafs Mebarki and Tebbourne Cheikh El-Bachir, University of Oran, Algeria

Room: 05

S-ECED 03 – Potpourri I: Ergonomics with Children, Youth and College Students

Accessibility evaluation of university facilities at the University of Houston
L Schulze, University of Houston, USA

Do teachers believe they are competent to promote healthy ICT use among their students?
R. Zlamanski and M. Ciccarelli, Curtin University, Curtin Health Innovation Research Institute, Australia

Postural assessment of school children: an input for the design of furniture
Maria Antónia Gonçalves and Pedro M. Arezes, Porto Polytechnic Institute, University of Minho, Portugal

Post occupancy evaluation of primary schools in Saudi Arabia
Sana Omari and Andree Woodcock, Dar Al-Hekma College, Saudi Arabia, Coventry School of Art and Design Coventry University, UK

Analysis of teacher’s workspace in a child care center
Vera Helena Moro Bins Ely, Vanessa Dorneles, Flávia Martini Ramos and Mariana Morais Luiz, Federal University of Santa Catarina, Brazil

Educational workload and its psycho-physiological impact on student organism
Oleksandr Burov and Oleksandra Tsarik, Institute of Gifted Child, National Aviation University, Ukraine

Room: 08

S-EinD 03 – Ergonomics and Design for Usability 1

Design for usability; practice-oriented research for user-centered product design
Daan van Eijk, Jasper van Kuijk, Frederik Hoolhorst, Chajoong Kim, Christelle Harkema and Steven Dorrestijn, Delft University of Technology, University of Twente, Eindhoven University of Technology, The Netherlands

Product and user profiles as a design technique to improve usability
C Kim and H Christiaans, Delft University of Technology, The Netherlands

The inclusion of ergonomic tools in the informational, conceptual and preliminary phases of the product design methodology
Ivan Luiz de Medeiros and Eduardo Concepción Batiz, University of Joinville Region UNIVILLE, Educational Society of Santa Catarina, Brazil

Ergonomics and usability of children interfaces: Spore®, the case study
Adriana Chammas, Anamaria de Moraes and Eduardo Ariel Teixeira, Pontifical Catholic University, Pontifical Catholic University of Rio de Janeiro, Escola Superior of Advertising and Marketing, Brazil

A children, teachers and designers as evaluators of usability of educational software
Luciana Freire, Marcelo Soares and Stephanie Padovani, Federal University of Pernambuco, Federal University of Paraná, Brazil

A literature review about usability evaluation methods for e-learning platforms
Luciana Lopes Freire, Pedro Miguel Arezes and José Creissac Campos, University of Minho, Portugal
Room: 09

S-EinD 06 – Ergonomics and Digital Design

Evaluating insole design with joint motion, plantar pressure and rating of perceived exertion measures
Yu-Chi Lee, Gloria Lin and Mao-Jiun J. Wang, National Tsing Hua University, Taiwan

A mind in a disk: the attribution of mental states to technological systems
Oronzo Parlangel, Tommaso Chiantini and Stefano Guidi, University of Siena, Italy

User’s demography and expectation regarding search, purchase and evaluation in mobile application store
Wilson Prata, Anamaria de Moraes and Manuela Quaresma, Pontifical Catholic University of Rio de Janeiro, Brazil

Exploring the requirements for multimodal interaction for mobile devices in an end-to-end journey context
Claudia Krehl and Sarah Sharples, University of Nottingham, UK

The ergonomic evaluation of a virtual learning environment usability
Aliana Pereira Simões and Anamaria de Moraes, Pontifical Catholic University, Brazil

Usability interface design and evaluation on personal diet management system
H Lin and E Wang, National Tsing Hua University, Taiwan

Room: 10

S-HEALTH 03 - Organizational Ergonomics In Healthcare 2
CHAIR: Cabral, A
COCHAIR: Deepak Sharan

Professional Competencies of nurses in a basic healthcare center of Belo Horizonte
A Machado, Pythagoras Faculty, Brazil

An ergonomic analysis of work in the process of professional rehabilitation in Brazil
A Cabral, M Souza e Silva, E Louzada and W Cesar, Federal University of Pernambuco, Brazil

Ergonomic constraints among nursing workers in the sectors of emergency care in two public hospitals in Brazil
Maria Goreth Bandeira, Raimundo Lopes Diniz and Ana Hélia Sardinha, Federal University of Maranhão, Brazil

Injury prevention in physiotherapists - a scientific review
Deepak Sharan and PS Ajeesh, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Musculoskeletal disorder related to the work of doctors who perform medical invasive evaluation
D P Maciel, R A M Millen, C A Xavier, L C Morrone and J S Silva-Júnior, Santa Casa Medical Sciences School, Brazil

Participatory work improvement training for promoting good health care practices in Burundi
T Yoshikawa, K Kogi, N Pascal, Institute for Science of Labour, Japan

Room: 11

S-MSDs 03 - Methods for risk assessment
Chair: Enrique Alvarez Casado

**Method inventory for assessment of physical activity at VDU workplaces**
Rolf Ellegast, Britta Weber and Rena Mahlberg, Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA), Germany

**Assessing manual lifting tasks based on segment angle interpolations**
Chien-Chi Chang, Xu Xu, Gert S. Faber, Idsart Kingma and Jack Dennerlein, Liberty Mutual Research Institute for Safety, Harvard School of Public Health, USA, Vrije Universiteit, The Netherlands

**Workload evaluation of repetitive one-handed handling by biomechanical, physiological, and subjective measures**
M Jung, S Mo, K Lee, K and J Kwag, Ajou University, Republic of Korea

**Biomechanical analysis of compression force at intervertebral disc L5/S1 under asymmetric manual material handling**
G De la Teja, De la Teja and L Santa Cruz, National Autonomous University of Mexico, Mexico

**Prevalence of low back disorders among female workers and biomechanical limits on the handling of load and patients**
Manuel Gutiérrez and Jorge Monzó, University of Concepción, Hospital las Higueras of Talcahuano, Chile

**Application of discriminant analysis-based model for prediction of risk of low back disorders due to workplace design in industrial jobs**
G M D Ganga, K F Esposto and D Braatz, University Federal of São Carlos, University of São Paulo, Brazil

Room: 12

**S-Saf&Hth 03 - Noise and Safety at Work**

**Comparison between occupational noise measurement strategies: why is it important?**
Susana Costa and Pedro Arezes, University of Minho, Portugal

**Human response to three different noise levels in an Iranian tire manufacturing company**
M Monazzam Esmaeil, Tehran University of Medical Science, Iran

**SCANAM method for the assessment of industrial noise**
Aleksandar Zunjic, University of Belgrade, Serbia

**Analysis of noise on construction sites of high-rise buildings**
Béda Barkokébas Jr, Bianca M. Vasconcelos, Eliane Maria G. Lago and Aline Fabiana P Alcoforador, University of Pernambuco, Brazil

**The binomial work-health in the transit of Curitiba city**
Eunice Tokars, Antonio Renato Pereira Moro and Roberto Moraes Cruz, Federal University of Santa Catarina, Brazil

**Risk assessment in the maintenance operations of the health equipments**
M Rodrigues and N Teixeira, University of Aveiro, The Institute of Welding and Quality, Portugal

Room: 02

**S-WWCS 01 - Ergonomic Design and Evaluation of Complex Computer Systems 1**
Dosvox usability: recommendations for improving interaction of blind people with the web using the system
Edson Rufino de Souza and Sydney Fernandes de Freitas, National Institute of Industrial Property, ESDI/UEJR, Brazil

About authentication, security, password re-set features and users behaviors in using web application
A Moallem, San Jose State University, USA

Cognitively automated assembly processes: a simulation based evaluation of performance
Marcel Ph. Mayer, Barbara Odenthal, Marco Faber and Christopher M. Schlick, RWTH Aachen University, Germany

Usability and decision support systems in emergency management
Mats Danielsson and Håkan Alm, Luleå University of Technology, Sweden

State of the (net)work address developing criteria for applying social networking to the work environment
André Calero Valdez, Anne Kathrin Schaar and Martina Ziefle, RWTH Aachen University, Germany

A method for work modeling at complex systems: towards applying information systems in family health care units
Alessandro Jatobá, Paulo Victor R. de Carvalho and Amauri Marques da Cunha, Oswaldo Cruz Foundation, Federal University of Rio de Janeiro, Brazil

Company Case Studies

Time: 04:30pm – 6:00pm

Room: 04

CCS03 – Company Case Studies from Industry 1
Chairperson: to be determined

Ergonomics Interventions in welding and assembly operations
J Kappellusch, University of Wisconsin – Milwaukee, USA

Ergonomics, automation and logistics: practical and effective combination of working methods, a case study of a baking company
Leonardo Quintana, Claudia Arias, Jorge Cordoba, Magda Moroy, Jean Pulido and Angela Ramirez, Javeriana University, Colombia

Development of an ergonomics device for maintenance of hydraulic generators of Tucuruí hydropower plant
I C Batista, G J C Gomes, C S Teles, P F Oliveira, R M Santos, A C Sassi, B B V Sá and A A Pardauil, Eletrobras Eletronorte, Brazil

Design and implementation of ergonomic performance measurement system at a steel plant in India
Pradip Kumar Ray and V K Tewari, Indian Institute of Technology Kharagpur, India

Ergonomic study of operators’ work of a molybdenum plant
E Oñate and F Meyer, Universidad de Concepcion, Chile

Posters
Time: 01:00pm – 06:00pm

Congress Hall

Area: Aging

Influences of tactile-dot height and tip radius of curvature on the operational performance of cellular phones
Wataru Toyoda, Kouki Doi and Hiroshi Fujimoto, Waseda University, National Institute of Special Needs Education, Japan

Influences of the edge radius of curvature of tactile dots and bars on their discriminability
Wataru Toyoda, Kouki Doi and Hiroshi Fujimoto, Waseda University, National Institute of Special Needs Education, Japan

A literature review of major perceptual, cognitive, and/or physical test batteries for older drivers
Marc D. Gentzler and Janan A. Smither, University of Central Florida, USA

Examining the impact of age and multitasking on motorcycle conspicuity
Jonathan L. Ledbetter, Michael W. Boyce, Drea K. Fekety, Ben Sawyer, and Janan A. Smither, University of Central Florida, Orlando, U.S.A.

Movement-in-depth, cognitive impairment, and crash risk
Janan Al-Awar Smither, Marc C. Gentzler and Robert S. Kennedy, University of Central Florida, RSK Assessments, USA

Area: Agriculture

Study of postures in sugarcane cutters in the Pontal of Paranapanema-SP, Brazil
Iracimara de Anchieta Messias and Emico Okuno, Paulista State University, University of São Paulo, Brazil

Postural analysis of workers in a typical meat processing company in Brazil
Wemerton Luis Evangelista, Ilda de Fátima Timoco, Amaury Paulo de Souza, Luciano José Minette, Fernando da Costa Baeta, Emilia Pio da Silva and Luciana Aparecida de Oliveira, Federal Institute of Minas Gerais, Federal University of Viçosa, Brazil

The ergonomics analysis of work: a case study in a experimental farm
Maria de Lourdes Santiago Luz and Syntia Lemos, State University of Maringá, Brazil

Implementation of a strategic model for mitigating hardship of Indian women farmers through technology intervention
Suman Singh, Hemu Rathore and Kailash Brijwasi, Maharana Pratap University of Agriculture and Technology, Jatan NGO, India

Pesticide exposure and sprayer design: ergonomics evaluation to reduce pesticide exposure
Sonia Grimbuhler, Mandy Lambert, Julien Nelson and James Richardson, Cemagref, University Paris Sud XI, Arts et Metiers ParisTech, France

Area: Anthropometry

On the road toward the development of clothing size standards and safety devices for Chilean workers
Esteban Oñate, Felipe Meyer and Jorge Espinoza, University of Concepcion, Chile
Metrology and ergonomic mensuration parameters  
C Cardoso and L Drucker, Inmetro, Brazil

A study of automotive workers anthropometric physical characteristics from México northwest  
Karla Lucero-Duarte, Enrique de la Vega-Bustillos and Francisco López-Millán, Technological Institute of Hermosillo, Mexico

Anthropometric data of adult wheelchair users for Mexican population  
Karla Lucero-Duarte, Enrique de la Vega-Bustillos, Francisco López-Millán and Selene Soto-Félix, Technological Institute of Hermosillo, Mexico

Analysis of the suitability of furniture university - anthropometric characteristics of user  
Amanda S. Castilho, Camila de Cássia A. Leme and Rosimeire S. Padula, University of São Francisco, University Center of São Paulo, Brazil

A practical approach to the assesment of manual handling equipment for cargo: multinational abrasives in Brazil  
João Barbosa Neto, Eduardo Aparecido Centeio, Fernando de Sampaio Siqueira and Rosimeire Simprini Padula, SENAC, City of São Paulo University, Brazil

Anthropometry of Algerian elderly  
L Bouabdallah, Setif University (Farhat Abbas), Alkgeria

Area: Auditory Ergonomics

A study on the influence of headphones in auditory perceptual function  
Yoshinori Horie and Takashi Toriizuka, Nihon University, Japan

Effects of placement point of background music on shopping website  
Chien-Jung Lai and Chia-Chi Chiang, National Chin-Yi University of Technology, Taiwan

Area: Building and Construction

Critical analysis about solutions and models of solar shades in non-residential buildings from tropical regions  
J A B Castañon, L F D Caldeira, M F Gervásio and F M Brum, Federal University of Juiz de Fora, Brazil

Mass of materials: the impact of designers on construction ergonomics  
John Smallwood, Nelson Mandela Metropolitan University, South Africa

Ergonomic study in furniture manufacturing facilities  
Amaury Souza, L Minetti, A de Moraes and M Zama e Santiago, Federal University of Viçosa, Brazil

Abandonment and accessibility in railway historical buildings: Central do Brasil and Leopoldina Railstation  
C C G Brasil, A M Costa and J A B Castañon, Federal University of Juiz de Fora, Brazil

Ergonomics in built environment: wayfinding and airports  
Lucia Ribeiro and C Mont´Alvão, Pontifical Catholic University of Rio de Janeiro, Brazil

The question of the ergonomic use of virtual models  
J A B Castañon, T S Saraiva and T T Araujo, Federal University of Juiz de Fora, Brazil

Area: Ergonomics Analysis of Work and Training
Differences in cashiers work technique regarding wrist movements when scanning groceries
Palm Peter, Johansson Elin, Kjellberg Katarina and Josephson Malin, Uppsala University, University of Gävle, Karolinska Institute, Sweden

Differences in workstyle behaviors between cashiers regarding use of idle time
Peter Palm, K Kjellberg, M Josephson and E Johansson, Uppsala University, Karolinska Institute, Sweden

Ergonomics analyses of five joineries located in Florianópolis-SC, using the LEST Method
Lizandra Lupi García Vergara, Carolina Schwinden Garcia and Felipe Vergara Miranda, Federal University of Santa Catarina, Brazil

Experimental indicators of ergonomic wellness and quality of life: salivary and hair cortisol
P. L. Esposito, A. Comin, T. Peric, M. Montillo, M. Mascolo, G. Tubaro and A. Prandi, University of Udine, Hospital of San Giorgio, Italy

Increased of Brazilian productivity in the slaughterhouse sector: a review
Márcia Rosângela Buzanello and Antônio Renato Pereira Moro, Federal University of Santa Catarina, State University of West of Paraná, Brazil

The ergonomic process of an automotive company in Brazil: a study case
Carolina Bustos, Daniela Fischer, Lucimara Ballardin and Rudolf Nielsen, Processes and Environments Ltda.

Ergonomic risks in mining companies: a study in Paraiba/Brazil
S F A Morais, A C Q Santos, W P Gonçalves, H C Albuquerque Neto and E J Sanjínex Argandoña, Federal University of Campina Grande, Brazil, University of Porto, Federal University of Grande Dourados, Portugal

The challenges of interdisciplinary education and its application on teaching ergonomics
Letícia Holtz Barbosa and Maria Helena Câmara Pinheiro, University Center Barão de Mauá, University of Ribeirão Preto, Brazil

Job satisfaction among control room operators of electrical systems
Amanda A Silva Macaia, Elaine C Marqueze, Lúcia Rotenberg, Frida Marina Fischer and Claudia R C Moreno, University of São Paulo, Oswaldo Cruz Institute, Brazil

Analysis of the ergonomic usage of the ARMflex® in the odontological area
Cynthia Casagrande Matos, Alda Milagres de Assis, Lucas Viana Quites and Daniela Casagrande Matos, University of Ouro Preto, University of Minas Gerais, State University of Minas Gerais, Brazil

The structuring of an ergonomics program as a center of occupational health component in a public health institution
Suzana S. M. Lugão, Simone L. S. I. Ricart, Renata M.S. Pinheiro and Waldney M.Gonçalves, Oswaldo Cruz Foundation (FIOCRUZ), Brazil

Analysis of working conditions focusing on biological risk: firefighters in Campo Grande, MS, Brazil
Luciana Contrera-Moreno, Sonia Maria Oliveira de Andrade, Ana Rita Coimbra Motta-Castro, Alexandra Maria Almeida Carvalho Pinto, Frederico Reis Pouso Salas and Alcione Cavalheiros Faro Stief, Federal University of Mato Grosso do Sul, Fire Brigade of Mato Grosso do Sul, Brazil

Ergonomic analysis of the work conditions of porters and owners of the supply center of Campinas, SP
Tatiana Giovanelli Vedovato, Maria Inês Monteiro and Valéria Aparecida Masson, State University of Campinas, Brazil

Validity of heart-rate based measurements of oxygen consumption during work with light and moderate physical activity
Eva Bernmark, Mikael Forsman, Gunilla Pernold and Christina Wiktorin, Karolinska Institute, Sweden

Regulation in work and decision-making in the activity of public prosecutors in SC
Beatriz Marcondes de Azevedo and Roberto Moraes Cruz, Santa Catarina Federal University, Brazil

Finding the team for mars: a psychological and human factors analysis of a mars desert research station crew
Benjamin D. Sawyer, P.A. Hancock, John Deaton and Peter Suedfeld, University of Central Florida, Florida Institute of Technology, USA, UBC Department of Psychology, Vancouver

Ergonomic analysis for integration of industrial chairs: a case study in a Pernambuco's swimwear manufacturer
Carlos Vilar and M Soares, Guararapes Faculty, Federal University of Pernambuco, Brazil

Wood, management and dust: analysis of the Context of Production of Goods and Services (CPGS) of an academic woodworking
Isabella von Mühlen Brandalise, Paula Macedo César and Clara Cristina de Souza Rêgo, University of Brasilia, Brazil

Maximum force levels in different positions of shoulder and elbow
C Castro, E De la Vega, G Báez and F Carrasco, Indigenous Autonomous University of Mexico, Technological Institute of Hermosillo, Autonomous University of Sinaloa, Mexico

Development of the workflow line systems for support on KAIZEN
Yuki Mizuno, Toshihiko Ito, Toru Yoshikawa, Satoshi Yamogida, Koji Morio and Kazuhiro Sakai, Toyo Gakuen University Center for Liberal Arts, The Institute for Science of Labour, DSS Co., Ltd., Institute for Medical Engineering Integration, Japan

Lean six sigma applied to ergonomics
Eduardo Santos and C Lima, Anhanguera Faculty, Brazil

Ergonomics and the Inclusion of disabled people in the Brazilian job market
L B Martins and A K P S Cabral, Federal University of Pernambuco, Brazil

Ergonomic intervention methods for inclusion of people with disabilities at work: Brazilian scene
A K P S Cabral and L B Martins, Federal University of Pernambuco, Brazil

New guidelines for health care for alcohol and drug users and the real work: possible contributions of ergonomics to the restructuring of work and competence development
Daniela Tonizza de Almeida and Eliza Helena de Oliveira Echternacht, Federal University of Minas Gerais, Brazil

Support system for management of shares ergonomic
Raphael Pacheco da Rocha and Mario Cesar Rodriguez Vidal, Federal University of Rio de Janeiro, Brazil

Ergonomic evaluation of the preparation of cuttings and minicuttings for eucalyptus seedling production, with the use of scissors
Eduarda Gabriela Santos Cunha, Amaury Paulo de Souza and Luciano José Minette, Federal University of Viçosa, Brazil

Slope effect on pushing forces
E Turpin-Legendre and J P Meyer, Work Physiology Laboratory, France

Statistical precision of categorical PATH observations of trunk posture
Ports restructing: what has changed after the Brazilian law 8.630/93
Isaac Andrade, R Maciel, M Fontenelle, T Matos, University of Fortaleza, Brazil

Analysis of the workload of bank tellers of a Brazilian public institution
Simoni S. Serikawa, Ana Carolina S. Albieri, Gustavo P. Bonugi and Marina F. Greghi, Senac University Center, Brazil

Body postures versus production requirements - the case of a fiberglass parts factory
V Silva, B Pereira, R Maria and T Chagas, University Center of Patos de Minas, Federal Institute of Education, Science and Technology of Minas Gerais, Federal University of Ouro Preto, Brazil

A novel wearable measurement system for ambulatory assessment of joint loading in the occupational setting
Gert Faber, Chien-Chi Chang, Idsart Kingma and Jack T. Dennerlein, Harvard School of Public Health, Liberty Mutual Research Institute for Safety, USA, VU University, The Netherlands

Using practical ergonomic evaluations in the restaurant industry to enhance safety and comfort: a case study
Marc D. Gentzler and Janan A. Smither, University of Central Florida, USA

Ergonomic assessment of porridge roaming sale system
J Braga, V Cardoso, A Abreu, L Didoné, M Evangelista and F Serra, Federal University of Amazonas, Brazil

Effects of a labor gym program in mental workload of workers from rectory of UNIOESTE
Isabele Maia Galvão, José Mohamud Vilagra, Helenara Salvati Bertolossi Moreira, Antônio Renato Pereira Moro, Roberto Moraes Cruz, Pedro Ferreira Reis and Mauricio Bertolossi Moreira, State University of West of Paraná, Assis Gurgacz, Federal University of Santa Catarina, Brazil

Area: Ergonomics for Children and Educational Environments

Analysis on the relationship between the school furniture and the work surface lighting and the body posture of public middle school students from João Pessoa, Paraíba, Brazil
Luiz Bueno da Silva, Eliza Juliana da Costa Eulálio, Antonio Souto Coutinho, Elaine Victor Gonçalves Soares and Roberta de Lourdes Silva dos Santos, Federal University of Paraíba, Brazil

The "Posture Pad": an ergonomic posture feedback device
Rhonda Epstein, E Epstein, S Colford, M Walsh, B Loye and K Jakobs, Canyon Crest Academy, Bost University, USA

Ergonomic considerations in school environments - the need for widening the scope
Kapila Jayaratne, Ministry of Health, Sri Lanka

Furniture dimensions and postural overload for school children's neck and upper limbs
Mariana Batistão, H Coury, C Moriguichi de Castro, G Hansson, T Sato and A Sentanin, Federal University of São Carlos, Brazil, Occupational and Environmental Medicine, USA

Ergonomic adequacy of the baby nursery of child development center located in UFSC - Florianópolis
Lizandra Garcia Lupi Vergara and Lucie Elisa Ribet, Federal University of Santa Catarina, Brazil

Sleep patterns and sleepiness of working college students
Liliane Teixeira, Arne Lowden, Andrea Aparecida da Luz, Samantha Lemos Turte, Daniel Valente, Roberto Jun Matsumura, Leticia Pickersgill de Paula, Meire Yuri Takara, Roberta Nagai-Manelli and Frida Marina Fischer, FIOCRUZ, University of São Paulo, Brazil, Stockholm University, Sweden

Global healthy backpack initiatives
Kapila Jayaratne, Karen Jacobs and Dulitha Fernando, Ministry of Health, University of Colombo, Sri Lanka, Boston University, USA

Keynote speeches

Time: 06:00pm – 07:00pm

Guararapes Auditorium

Practical ways to facilitate ergonomics improvements in occupational health practice
Kazutaka Kogi, Institute for Science of Labour, Kawasaki, Japan and President of International Commission on Occupational Health (ICOH), Japan

Beberibe Auditorium

Accessible design, Sustainability and the role of International Standardization
Kenji Kurakata, National Institute of Advanced Industrial Science and Technology, Japan and Georg Krämer, VBG Insurance, Germany

Brum Auditorium

Human Factors and Sustainable Development
Dave Moore, Risk and Design Team at Scion New Zealand

Ribeira Auditorium

Active Age Management
Kurt Landau, Darmstadt University of Technology, Germany

Tuesday, 14 February

Technical Committee Meetings

Time: 08:30am – 10:30am

Room 03 - Ergonomics in Design

Room 04 - Affective Design

Room 09 - Aging

Room 11 - Gender and Work

Room 14 - Human Factors and Sustainable Development
Room 15 - Musculoskeletal Disorders

Time: 10:45am - 12:45pm

Room 05 - International Journal of Human Factors and Ergonomics

Workshops

Time: 08:30am – 12:45pm

Room: 06

W 05  Design for healthcare
Richard Goossens and Marijke Melles, Delft University of Technology, The Netherlands

Room: 07

W 06  Ergonomics of ambulance design
Chris Fitzgerald, Risk & Injury Management Services Pty Ltd, Australia

Room: 08

W 07  Participatory ergonomics for small enterprises
Kazutaka Kogi, President of International Commission on Occupational Health (ICOH) and Institute for Science of Labour, Japan

Room: 10

W 08  Accessibility: from wallflower to major challenge for ergonomics and standardization
Georg Krämer and Kurakata Kenji, VBG Insurance, Germany, National Institute of Advanced Industrial Science and Technology and Institute for Human Science & Biomedical Engineering, Japan

Symposiums

Time: 01:00pm – 02:30pm

Room: 13

S16 World engineering anthropometry resource, tools and applications
Chair: Kathleen Robinette

WEAR Data Network case studies: predicting morphological evolution and analysis of morphological variations related to educational or activity levels
R Mollard, Kathleen Robinette and Sarah Skelton, Université Paris Decartes, LATI, Paris, ERGOnomics TECHnologies, South Africa

A protocol for evaluating the accuracy of 3D body scanners
Makiko Kouchi, Masaaki Mochimaru, Bruce Bradtmiller, Hein Daanen, Peng Li, Beatriz Nacher and Yunja Nam, National Institute of Advanced Industrial Science and Technology, Japan, Anthrotech Inc., USA, Department of Human Performance, Business Unit of Human Factors, The Netherlands, US Army Natick
Where is the human waist? Definitions, manual compared to scanner measurements
Daisy Veitch, SHARP Dummies Pty Ltd, Australia

Comparing swimsuits in 3D
Erik van Geer, Johan Molenbroek, Sander Schreven, Lenneke deVoogd-Claessen and Huib Toussaint, Erik van Geer Product Development, TU Delft, VU University Amsterdam, The Netherlands

A multidimensional approach to the generation of helmets’ design criteria: a preliminary study
S Alemany, J Olaso, B Nacher, M Gil, A Hernández, M Pizá, C Solves, Polytechnique University of Valencia, Spain

Measurement of breast volume using body scan technology (computer-aided anthropometry)
Daisy Veitch, Karen Burford, Phil Dench, Nicola Dean and Philip Griffin, SHARP Dummies Pty Ltd, Flinders Medical Centre, Headus (metamorphosis) Pty Ltd, Australia

Room: 15

S19 Human Factors and Ergonomics in the Building and Construction Industry 4
Chairs: Vera Bins Ely, Co-chair: Gert Faber

The ergonomic and legal aspects of the heritage of the state of Pernambuco - Brazil
Terezinha de Jesus Pereira da Silva and Augusto Eugenio Paashaus Neto, Federal University of Pernambuco, Fundarpe - Foundation of Historical and Artistic Heritage of Pernambuco, Brazil

Communication of Ergonomics in building and construction
Viveca Wiberg, Swedish Work Environment Authority (SWEA), Sweden

From usability requirement to technical specifications for hand-held tools and materials: an applied research in the construction field
Gabriella Duca and Erminia Attaianese, University of Naples Federico II, Italy

Accessibility in the fortress of São José da Ponta Grossa
J Callado and A Poletto, Federal Institute of Education, Science and Technology of Santa Catarina, Brazil

Analysis of Acessibility for buidings of a graduation school – an experiment in ergonomics training curriculum
ASG Acioly, MD Oliveira, VHF Freitas, Federal University of Paraíba, Brazil

Room: 16

S22 Transport Ergonomics and Human Factors I
Chair: Anabela Simões, Institute Superior of Management, Portugal

Naturalistic observation of drivers’ interactions while overtaking on an undivided road
Evangelia Portoulï, Dimitris Nathanael, Nicolas Marmaras and Vassilis Papakostopoulos, National Technical University of Athens, University of the Aegean, Greece

Comparison of two human-machine-interfaces for cooperative maneuver-based driving
Benjamin Franz, Michaela Kauer, Anton Blanke, Michael Schreiber, Ralph Bruder and Sebastian Geyer, Technical University of Darmstadt, Institute of Automotive Engineering, Germany
Safety implications of infotainment system use in naturalistic driving
Miguel A. Perez, Virginia Tech Transportation Institute, United States

Using naturalistic driving films as a design tool for investigating driver requirements in HMI design for ADAS
Minjuan Wang, Dong Sun and Fang Chen, Chalmers University of Technology, Sweden

A method to investigate drivers’ acceptance of Blind Spot Detection System®

A comprehensive literature review of the pelvis and the lower extremity fe human models under quasi-static conditions
Al-Dirini R.M.A., Thewlis D. and Paul G., University of South Australia, Australia

Room: 17

S25 Gender, work activity and risk: what are the implications for intervention?
Chair: Rima Habib, American University of Beirut, Lebanon

Effects of extended work shifts on employee fatigue, health, satisfaction, work/family balance, and patient safety
Madeleine Estryn-Béhar, Beatrice J.M. Van der Heijden and the NEXT Study Group, Assistance-Public-Hospitals of Paris, France, Radboud University Nijmegen, Open University of the Netherlands, University of Twente, The Netherlands

The impact of career-long tensions between different spheres of life on kindergarten teachers at the end of their careers
Dominique Cau-Bareille, Institute d’Etudes du Travail de Lyon, France

When gender bumps into health and safety training: working conditions, readings and challenges drawn from a case study in an industrial chemicals company
Ricardo Vasconcelos, Sandra Teixeira, Joana Castelhano and Marianne Lacomblez, University of Porto, Portugal

Thinking about gender, thinking about a common space of observation and discussion of the work activity of the other: the case of bus drivers
Liliana Cunha, Sónia Nogueira and Marianne Lacomblez, University of Porto, Portuguese Catholic University, Portugal

The activity of occupational health physicians in relation to the task of keeping people affected by MSD in employment: a gender effect?
S. Caroly, University of Grenoble, France

Parallel Sessions

Time: 01:00pm – 02:30pm

Room: 01

S-ATWAD 04 - Innovations: Conceptual Approaches
Finding disturbances in on-farm biogas production
Marco Antonio Pereira-Querol and Laura Seppänen, University of Helsinki, The Finnish Institute of Occupational Health, Finland

Activity at work, innovation and sustainable development
P Béguin, F Duarte, F Lima and V Pueyo, Institut d’Etudes du Travail de Lyon, France, Federal University of Rio de Janeiro, Federal University of Minas Gerais, Brazil

The concept of Contradiction in Ergonomics Practice
Dimitris Nathanael, Nikos Zarboutis and Nicolas Marmaras, National Technical University of Athens, Worksystems Engineering, Greece

User-driven innovation of an outpatient department
Ole Broberg and Kasper Edwards, Technical University of Denmark, Denmark

Analyzing innovation as a change within “professional worlds”
P Béguin and V Pueyo, Institut National de Recherche Agronomique, IETL, Université Lyon2, France

Ergonomics in projects of oil platforms in a change context
Barbara Oggioni, Francisco Duarte and Cláudia Cordeiro, Federal University of Rio de Janeiro, Brazil

Room: 02

S-AHFE 01 - Human Factors and Ergonomics in Aerospace 1
Chair: Guy A. Boy, Florida Institute of Technology, USA

The realistic consideration of human factors in model based simulation tools for the air traffic control domain
Gabriella Duca and Erminia Attaianese, University of Naples Federico II, Italy

Analysis of the work of air traffic controllers of the approach control area (APP) of Porto Alegre, Brazil
C V Vargas, L B de M Guimarães and A M O Sant’Anna, Federal University of Rio Grande do Sul, Pontifical Catholic University of Parana, Brazil

Factor interaction influences on human performance in air traffic control: the need for a multifactorial model
Tamsyn Edwards, Sarah Sharples, John R. Wilson and Barry Kirwan, University of Nottingham, UK, Eurocontrol Experimental Centre, France

Application of the user-centred design process according ISO 9241-210 in air traffic control
Christina König, Thomas Hofmann and Ralph Bruder, Darmstadt University of Technology, University of Applied Sciences Osnabrück, Germany

Air accident investigation among regulatory agencies
Marcia Fajer and Frida Marina Fischer, Defense State Ministry, Aeronautics Air Command, University of São Paulo, Brazil

Manual flying skills under the influence of performance shaping factors
Andreas Haslbeck, Ekkehart Schubert, Linda Onnasch, Gerhard Hüttig, Heiner Bubb and Klaus Bengler, Technical University of Munich, Technical University of Berlin, Germany

Room: 06

S-EAWT 07 – Manual Material Handling
Training in manual material handling: what is going on in the field?
Veerle Hermans, Griet De Preter and Tine Verschueren, External Prevention Service for Health and Safety at Work, Vrije Universiteit Brussel, Prevention Department, AZ Monica, Belgium

Ergonomic assessment methodologies in manual handling of loads - opportunities in organizations
Claudia Pires, CATIM – Center for Technical Support to Metalworking Industry, Portugal

The manual transport of load and the commercial aviation in Brazil
Carlos André Vaz Junior, Federal University of Rio de Janeiro, Brazil

Quantification of hand grasp force using a pressure mapping system
Jon W. Nicholas, Russel J. Corvese, Charles Woolley and Thomas J. Armstrong, University of Michigan, USA

Use of ergonomics assessment tools: dissemination and application by consulting firms in ergonomics in Brazil
J Camarotto and V Souza, Federal University of Sao Carlos, Brazil

Room: 08

S-EinD 07 - Ergonomics and the Virtual World

Risk factors and clinical features of text message injuries
Deepak Sharan and PS Ajeeh, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Using environmental affordances to direct people natural movement indoors
Elisângela Vilar, Luís Teixeira, Francisco Rebelo, Paulo Noriega and Júlia Teles, Technical University of Lisbon, Portugal

Participatory design in the project of virtual learning environment of histology
José Guilherme Santa-Rosa, Federal University of Rio Grande do Norte, Brazil

Developing an usability test to evaluate the use of augmented reality to improve the first interaction with a product
Deise Albertazzi, Maria Lucia Okimoto and Marcelo Gitirana Gomes Ferreira, Federal University of Parana, State University of Santa Catarina, Brazil

Use of augmented reality in the usability evaluation of products
Fernanda Faust, Giorgia Roepke, Tiago Catcati, Fernanda Araujo, Marcelo Gitirana Gomes Ferreira and Deise Albertazzi, State University of Santa Catarina, Federal University of Santa Catarina, Federal University of Parana, Brazil

How to reduce workload – augmented reality to ease the work of air traffic controllers
Thomas Hofmann, Christina König, Ralph Bruder and Jörg Bergner, University of Applied Sciences Osnabrück, Darmstadt University of Technology, DFS German Air Navigation Services, Germany

Room: 09

S-EinD 10 Ergonomics and Fashion Design

Analysis and discussion of impact upon comfort and quality in fashion products based in ergonomics principles and clothing fit
D Heinrich, M Carvalho and M Barroso, University of Minho, Portugal
Ergonomics and Fashion: the OIKOS methodology for usability and comfort evaluation in clothing and fashion
Suzana Barreto Martins, State University of Londrina, Brazil

The conception of fashion products for children: reflections on safety parameters
Lígia Gomes Pereira Prete, Lucimar de Fátima Bilmaia Emidio and Suzana Barreto Martins, Londrina State University, Brazil

Ergonomics analysis of the productive environment of fashion clothing firm in Belo Horizonte- MG
Andreia Salvan Pagnan and Jairo José Drummond Câmara, State University of Minas Gerais, Brazil

Ergonomic work analysis of sewing machine operator at fashion industries in Rio de Janeiro city
A Batista, Y Souto, R dos Santos, R Carvalho, Federal University of Rio de Janeiro, Brazil

Comparison of traditional and contemporary women underwear in the aspect of comfort
Miyase Çağdaş and Arzu Bor, Selcuk University, Turkey

Room: 03

S-EinM 01 - Ergonomics in Manufacturing 1
Chair: Gempur Santoso, University of PGRI Adi Buana Surabaya, Indonesia, Co-chair: Arabi, H, PSA Peugeot Citroen, France

Fatigue detection on standing position of doing lathe machine towards lactate acid and glucose concentrates
Gempur Santoso, University of PGRI Adi Buana Surabaya, Indonesia

Protocols of mechanical force measurements during tasks in real work situation with a dynamometer
H Arabi, A Morais, B Kapitaniak and O Buttelli, PSA Peugeot Citroen, France

The effect of Job Rotation intervals on muscle fatigue – Lactic acid
Rodrigo Filus and Maria Lucia Okimoto, Federal University of Parana, Brazil

Members of the human body prone to musculoskeletal damages: a comparison between the sector of transportation and footwear production
Jeane F Gomes de Lima, Geraldo Colaço, Ricardo da Silva and Francisco Masculo, Federal University of Paraíba, Brazil

Impact of hand forces and start/stop frequency on physiological responses to three forms of pushing and pulling: a South African perspective
Todd AI, Rhodes University, South Africa

Needs of ergonomic design at control units in production industries
I Levchuk, A Schäfer, KH Lang, HJ Gebhardt and A Klussmann, Institute of Occupational Health, Safety and Ergonomics (ASER), Germany

Room: 10

S-HEALTH 04 - Physical Ergonomics in Healthcare
Chair: Jennifer Long, Co-chair: Simon S. Yeung

Work-related musculoskeletal discomfort and injuries in Australian optometrists
Jennifer Long, Robin Burgess-Limerick and Fiona Stapleton, University of New South Wales, University of Queensland, Australia
Effect of tool handle design among dental practitioners: a randomized controlled trial
D Rempel, D Lee, K Dawson and P Loomer, University of California, USA

Risk reduction in musculoskeletal practice assistance professional nursing Pilot in semi intensive care unit
A Lemo, AG Silva, M Tucherman, C Talerman, RL Guastelli and C L Borba, Centre for Occupational Health, Albert Einstein Hospital Israeli Brazilian Benefit Society, Brazil

Identification of ergonomic risks due to postural load on operative dentistry activity
G la Teja and G Leon, National Autonomous University of Mexico, Social Security Institute of Mexico State and Municipalities, Mexico

Factors contributing to work related low back pain among personal care workers in old age
Simon S. Yeung, The Hong Kong Polytechnic University, Hong Kong

Ergonomic evaluation of laparoendoscopic single-site surgery ports in a validated laparoscopic training model
Bernadette McCrory, Bethany R Lowndes, Laura M Wirth, Adam E de Laveaga, Chad A LaGrange and M Susan Hallbeck, University of Nebraska, USA

Room: 05
S-HFSD 01 - Human Factors and Sustainable Development 1

A low cost technique to evaluate usable product for small manufacturing companies: a case study on Garcia robot
Vatana An and Marcelo M Soares, University of Central Florida, Federal University of Pernambuco, Brazil

Social responsibility and work conditions: building a reference label, Démarche T®
Sylvain Biquand and Benoit Zittel, Abilis ergonomie, Anthropie, France

A study of material composition disclosure practices in green footwear products
Jocelise J. Jacques and Lia B. M. Guimarães, Federal University of Rio Grande do Sul, Brazil

Designing for multiple global user populations: Increasing resource allocation efficiency for greater sustainability
G Nadadur and MB Parkinson, The Pennsylvania State University, USA

The usability of a product can be an ally of sustainability
Thaiana P. Anjos, Márcio Matias and Leila A. Gontijo, Federal University of Santa Catarina, Brazil

Room: 11
S-MSDs 04 - Contributions to methods for risk assessment and studies on working postures and muscular activity
Chair: Tom Armstrong

Developing a framework for assessing muscle effort and postures during computer work in the field: the effect of computer activities on neck/shoulder muscle effort and postures
JL Bruno Garza, BHW Eijckelhof, PW Johnson, SM Raina, P Rynell, MA Huysmans, JH van Dieën, AJ van der Beek, BM Blatter and JT Dennerlein, Harvard School of Public Health, USA, VU University Medical Center, Body@Work Research Center on Physical Activity, Work and Health, The Netherlands Organisation for Applied Scientific Research, The Netherlands
A biomechanical modeling approach to quantify musculoskeletal loading during dynamic two-wheeled cart pushing tasks
Y Sun, F Aghazadeh and A Nimbar, West Virginia University, Louisiana State University, USA

Evaluation of a personal device in reducing the risk of low back disorders during stooped work
Brent L. Ulrey and Fadi A. Fathallah, University of California, USA

Spinal disc hydration status during simulated stooped posture
Kenneth Johannaber and Fadi A Fathallah, University of California, USA

Principle component analysis of exposure variation analysis during computer work at presence of delayed onset muscle soreness
A Samani, A Kawczyński, J Chmura and P Madeleine, Aalborg University, Denmark, University School of Physical Education, Poland

Interactions between task repetition and psychosocial factors
Michael W Riley, Yu-Ting Hung, Mao-Jiun Wang, Yueh-Ling Lin and Jessica C. Blunk, University of Nebraska-Lincoln, USA, National Tsing Hua University, Taiwan

Room: 07

S-ODAM 01 - Telework, Knowledge Workers and Office Design: Effects on Comfort, Health and Productivity

The effects of new ways of work in the Netherlands: national data and a case study
P Vink, M Blok, M Formanov, E de Korte and L Groenesteijn, Delft University of Technology, TNO, The Netherlands

New ways of working: does flexibility in time and location of work change work behavior and affect business outcomes?
Merle M Blok, Liesbeth Groenesteijn, Roos Schelvis and Peter Vink, TNO, Delft University of Technology, The Netherlands

Examining the macroergonomics and safety factors among teleworkers: Development of a conceptual model
Michelle M Robertson, Lawrence M. Schleifer and Yueng-hsiang Huang, Liberty Mutual Research Institute for Safety, Rockville, USA

Expectation changes and team characteristics in a participatory design process
Conne Mara Bazley, Annelise De Jong and Peter Vink, JimConna Inc., USA, TU Delft, The Netherlands

Cognitive components and the ability to ignore and adapt to irrelevant stimuli: a key factor in open plan offices?
Knut Inge Fostervold, University of Oslo, Norway

Occupational health and safety professionals strategies to improve working environment and their self-assessed impact
Kirsten Olsen, Massey University, New Zealand

Room: 12

S-Saf&Hth 04 - Occupational Health

How can occupational health services in Sweden contribute to work ability?
Lisa Schmidt, John Sjöström and Ann-Beth Antonsson, IVL Swedish Environmental Research Institute, Sweden
Order-picking in deep cold – physiological responses of younger and older females. Part 1: heart rate
Karsten Kluth, Sandra Baldus and Helmut Strasser, University of Siegen, Germany

Order-picking in deep cold – physiological responses of younger and older females. Part 2: body core
temperature and skin surface temperature
Sandra Baldus, Karsten Kluth and Helmut Strasser, University of Siegen, Germany

Evaluation of the effect of using pictograms (pictures/signs) vs. text for training of safety procedures
Lawrence Schulze, University of Houston, USA

System modeling with the DISC framework: evidence from safety-critical domains
Teemu Reiman, Elina Pietikäinen, Pia Oedewald and Nadezhda Gotcheva, VTT Technical Research Centre of
Finland, Finland

Room: 14

S-WWCS 02 - Ergonomic Design and Evaluation of Complex Computer Systems 2

Development of an Expert System for Abnormal Operating Procedures in a Main Control Room
Min-Han Hsieh, Sheue-Ling Hwang, Kang-Hong Liu, Sheau-Farn Max Liang, Chang-Fu Chuang, National Tsing
Hua University, National Taipei University of Technology, Atomic Energy Council, Taiwan

The Influence of the Modality of Tele-cooperation on Performance and Workload
Thomas Alexander, Claudius Pfendler, Jürgen Thun and Michael Kleiber, Fraunhofer-Institute for
Communication, Information Processing, and Ergonomics (FKIE), Germany

Use of graphical modality in a collaborative design distant setting
Stéphane Safin, Roland Juchmes and Pierre Leclercq, University of Liège, Belgium

Invisible computer for collaborative design: evaluation of a multimodal sketch-based environment
Aurore Defays, Stéphane Safin, Françoise Darses, Anais Mayeur, Samia Ben Rajeb, Caroline Lecourtois,
François Guéna and Pierre Leclercq, University of Liège, Belgium, University of Paris-Sud, Ecole Nationale
Supérieure of Architecture of Paris La Vilette, France

Online advertising and usability: the effect of six types of banner in the process of viewing and
remembrance of the ads message
E Brandão and A Moraes, Pontifical Catholic University of Rio de Janeiro, Brazil

Visual social network analysis: effective approach to model complex human social, behaviour & culture
Tareq Z. Ahram and Waldemar Karwowski, University of Central Florida, USA

Company Case Studies

Time: 01:00pm – 02:30pm

Room: 04

CCS04 – Company Case Studies from Industry 2

Evaluation and prevention of ergonomic hazards: analysis of activity in ice cream parlors
Alexis Blanklejder Uriel and Maria Laura Carpovich, General Sweet S.A., PROVART, Argentina
Ergonomic work analysis of urban bus drivers in Rio de Janeiro city
Aloá Querido, Tainan Nogueira, Rafael Gama and José Orlando Gomes, Federal University of Rio de Janeiro, Brazil

Biomechanical modelling and evaluation of construction jobs for performance improvement
Ratri Parida and Pradip Kumar Ray, Indian Institute of Technology Kharagpur, India

Eletrobras management program in ergonomics: the pursuit of excellence through maturity levels
Paulo Roberto de Oliveira Bassil Pires and Fagner Fagundes Rezende, Centrais Eletricas Brasileiras S. A., Eletrobras, Brazil

Ergonomic design of crane cabins: a case study from a steel plant in India
Pradip Kumar Ray and V. K. Tewari, Indian Institute of Technology Kharagpur, India

Special sessions
Time: 01:00pm – 02:30pm

Brum Auditorium
SS05 – IEA KU smith student awards
Thomas Smith, Pascale Carayon and David Caple, University of Minnesota, University of Wisconsin-Madison, USA, David Caple & Associates, Australia

Beberibe Auditorium
SS06 - Meet the editors
Karen Jacobs, Boston University, USA

Ribeira Auditorium
SS07 – Good practices databases: a state of the art and their future
Chihwei Lu, Chung Yuan Christian University, Taiwan

Symposia
Time: 02:30pm – 04:00pm

Room: 13
S17 Anthropometric data acquisition and use
Chair: Masaaki Mochimaru, Co-chair: Makiko Kouchi

Photogrammetry procedures applied to anthropometry
Maria Lúcia Leite Ribeiro Okimoto and Alison Alfred Klein, Federal University of Paraná, Brazil

Using digital photogrammetry to conduct an anthropometric analysis of wheelchair users
Helda Oliveira Barros and Marcelo M. Soares, Federal University of Pernambuco, Brazil

Automatic anthropometric personalization of a digital human model from a set of subject’s photographs
Jean-Pierre Verriest, University de Lyon, France
An anthropometric survey using digital photogrammetry: a case study in Recife, Pernambuco, Brazil
Bruno Barros and Marcelo M. Soares, Federal University of Pernambuco, Brazil

Structuring software anthropometric variables on CD rom as a facilitator of the process of design of work situations
Sharinna Venturim Zanuncio, Carlos Emílio Barbosa Antônio, Jurgurta Lisboa Filho, Simone Caldas Tavares Mafra, Elza Maria Vidigal Guimarães, Vania Eugênia da Silva, Amaury Paulo de Souza and Luciano José Minette, Federal University of Viçosa, Department of the Ministry of Education and Culture (SESu/MEC), Brazil

A meta analysis of current clothing correction factor data and preliminary study on military clothing correction factors for the Australian Defence Force (ADF)
S Davis, Defence Science, Australia

Room: 15

S20 Human Factors and Ergonomics in the Building and Construction Industry 5
Chair: David Rempel, Co-chair: Peter Hoonakker

Organizational factors related to occupational accidents in construction
J M Jackson Filho, E D Fonseca, F P A Lima and F J CM Duarte, Fundacentro, Federal University of Minas Gerais, Federal University of Rio de Janeiro, Brazil

Young workers in the construction industry and initial OSH-training when entering work life
Kari Anne Holte and Kari Kjestveit
Department of Social science and business development, International Research Institute of Stavanger, Norway

Overview of ergonomics built environment
Ana Paula Lima Costa, Fábio Campos and Vilma Villarouco, Federal University of Pernambuco, Brazil

Interventions for overhead & concrete drilling
D Rempel, A Barr, I Janowitz, University of California, USA

Methodological proceedings to evaluate the physical accessibility in urban historic sites
Gabriela Sousa Ribeiro, Laura Bezerra Martins and Circe Maria Gama Monteiro, Federal University of Pernambuco, Brazil

Risk management project for work with precast concrete shells
Linda Rose, The Royal Institute of Technology, Sweden

Room: 16

S23 Transport Ergonomics and Human Factors II
Chair: Anabela Simões

Subcontracting: a safety risk?
G Carta and P Falzon, National Conservatory of Arts and Crafts (CNAM), France

Keeping rail on track: preliminary findings on safety culture in Australian rail
Verna Blewett, Sophia Rainbird, Jill Dorrian, Jessica Paterson and Marcus Cattani, Central Queensland University, University of South Australia, Cattani Consulting Pty Ltd, Australia
Understanding human factors in rail engineering: re-analysis of detailed, qualitative data on functions and risks
Brendan Ryan, John R. Wilson and Alex Schock, University of Nottingham, UK

Factors Affecting Driver Distraction through Roadside Advertisements in the Philippines
Alma Maria Jeniffer Gutierrez, De La Salle University, Philippines

Indonesian railway accidents – utilizing human factors analysis and classification system in determining potential contributing factors
Hardianto Iridiastadi, and Zulfa Fitri Ikatrinasari, Institut Teknologi Bandung, Universitas Mercu Buana, Indonesia

Room: 17

S26 Gender issues in various occupations
Chair: Rima Habib, Faculty of Health Sciences, American University of Beirut, Lebanon

Shift work problems and its impact on female nurses in Udaipur, Rajasthan, India
H Rathore, Maharana Pratap University Agriculture and Technology, India

Women’s working conditions in hospital cleaning: a case study
Silvana Salerno, Valentina Kolman, Lucilla Livigni, Andrea Magrini, Maria Giuseppina Bosco and Irene Figà Talamanca, ENEA Casaccia, Division of Biomedicine, University of Tor Vergata, Health Local Unit B, Rome, University La Sapienza, Italy

Gender differences on the job satisfaction in the phase of implementing advanced manufacturing technology in the Chinese manufacturing firms
Na Yu, Li Ming Shen and Siegfried Lewark, Nanjing Forestry University, China, University of Freiburg, Germany

Adequacy of ergonomic workstations with a gender perspective in oil and electrical industry
R Gonzalez, Bolivariana University of Venezuela, Venezuela

Influence of gender on the prevalence of Rsi/ Wruld in meat-packing plants
P Reis, A Moro, Eugenio Merino , J Vilagra, Federal University of Santa Catarina, Superior Institute of Foz do Iguaçu, University of West of Paraná, Brazil

Gender and age do not influence the ability to work
Rosimeire Simprini Padula, Luciana do Socorro da Silva Valente, Mônica Vasconcelos de Moraes, Luciana Dias Chiavegato and Cristina Maria Nunes Cabral, City of Sao Paulo University, Brazil

Parallel Sessions

Time: 02:30pm – 04:00pm

Room: 01

S-ATWAD 05 - Innovation: Methods for Innovation and Activity at Work

Expanding uses of building information modeling in life-cycle construction projects
Kerosuo Hannele, Miettinen Reijo, Mäki Tarja, Paavola Sami, Korpela Jenni and Rantala Teija, University of Helsinki, Finland
The use of participant-observation protocol in an industrial engineering research
Renato da Silveira e Silva, Laerte Idal Sznelwar and Victor D’Afonseca e Silva, University of Sao Paulo, Brazil

Intermediary objects in the workspace design process: means of experience transfer in the offshore sector
Carolina Conceição, Gislaine Silva, Ole Broberg and Francisco Duarte, Federal University of Rio de Janeiro, Technology Center of Rio de Janeiro, Brazil

Work situation operative model MOST: linking diagnosis and intervention to improve work conditions
Karen Lange Morales, Gabriel García-Acosta, William Urueña-Téllez and Adriana Pérez, National University of Colombia, Ergofactos Ltda, ColombiaDarmstadt University of Technology, Germany, Technical University of Catalunya, Spain, Pontifical Catholic University of Ecuador, Ecuador

The start up as a phase of architectural design process
Iara Sousa Castrp, Francisco de Paula Antunes Lima, Francisco José de Castro Moura Duarte, State University of Minas Gerais, Federal University of Minas Gerais, Federal University of Rio de Janeiro

Room: 02

S-AHFE 02 - Human Factors and Ergonomics in Aerospace 2
Chair: Dr. Guy A. Boy, Florida Institute of Technology, USA

Learning objects and training complex machines
Edgard Martins, Federal University of Pernambuco, Brazil

Application of diffusion maps to identify human factors of self-reported anomalies in aviation
Chris Andrzejczak, Waldemar Karwowski and Piotr Mikusinski, University of Central Florida, USA

Could mild hypoxia impair pilot decision making in emergencies?
Stephen Legg, Stephen Hill, Toby Mundel, Andrew Gilbey, Zac Schlader and Aaron Raman, Massey University, New Zealand

Targeting zero error in aviation maintenance: introducing ErroDefect, a tool for further aviation safety enhancement
H Rashid, Cranfield University, United Kingdom

The application of waste management systems for long duration spaceflight
James M. Oglesby
Institute for Simulation and Training, Department of Psychology, University of Central Florida, United States of America

Achieving impact in ergonomic research
Nick McDonald, Marie Ward and Rabea Morrison, Trinity College Dublin, Ireland

Room: 06

S- EAWT 08 – Evaluating the Human Activity

Human activity reference database
CP Guimarães, GL Cid, VS Santos, MCP Zamberlan, FCH Pastura, GMD Abud, C Lessa, DS Batista and MM Fraga, National Institute of Technology (INT), Pontifical Catholic University of Rio de Janeiro, Plínio Leite University Center, Brazil

Cognitive chrono-ethnography lite - privacy-issue-free study method for understanding human behavior: replacing video with pseudo-first-person-view movies using movement records
Masato Nakajima, Kosuke C Yamada and Muneo Kitajima, Institute of Advanced Industrial Science and Technology, Japan

Ergonomics principles to design clothing work for electrical workers in Colombia
Juan Castillo and A Cubillos, University of Rosario Bogota, National University of Colombia, Colombia

The construction of ergonomic demands: application on artisan fishing using jangada fishing rafts in the beach of Ponta Negra
Maria Christine Werba Saldanha, Ricardo José Matos de Carvalho, Larissa Praça de Oliveira, Joyce Elanne Mateus Celestino, Isis Tatiane de Barros Macêdo Veloso and Anelena Jaeschke, Federal University of Rio Grande do Norte, Brazil

Ergonomic tridimensional analysis: critical ergonomic factors identification in a commercial environmental
IF Loureiro, CP Leão, and PM Arezes, University of Minho, Portugal

Science as a service: understanding successful knowledge transfer in a New Zealand research institute
D Moore, K Bayne, and T Barnard, New Zealand Forest Research Institute (SCION), New Zealand

Room: 08
S-EinD 08 – Ergonomic Evaluation on Product Design 1

Ergonomic evaluation of novel tool for snap-off the neck of ampoule
Bor-Shong Liu, Jun-Ting Lee and Ching-Wen Lien, St. John’s University, Taipei Hospital, Taipei Veterans General Hospital, Taiwan

Product perception from sensory stimuli: the case of vacuum cleaner
Caio Márcio Almeida e Silva, Maria Lúcia R. L. Okimoto and Raffaela Leane Zenni Tanure, Federal University of Parana, Federal University of Rio Grande do Sul, Brazil.

The technological obsolescence of the Brazilian eletronic ballot box
Carlos Rogério Camargo, Richard Faust, Eugênio Merino and Clarissa Stefani, Federal University of Santa Catarina, Brazil

Designing an ergonomic backpack for student aged 7-9 through user centred design approach
Mahdie Amiri, Mohsen Safar Dezfooli and Seyed Reza Mortezaei, Iran University of Science and Technology, Iran

The role of usability in the evaluation of accidents: human error or design flaw?
Walter Correia, Marcelo M. Soares, Marina Barros and Fábio Campos, Federal University of Pernambuco, Brazil

Exergames: the role of ergonomics and design in helping to control childhood obesity through physical and functional exercise program
Marina Barros, André Neves, Walter Correia and Marcelo M. Soares, Federal University of Pernambuco, Brazil

Room: 09

S-EinD 11 – Physical Demand on Ergonomic Design 1

Design and construction of a prototype of ergonomic pad controlled through electronic sensors to correct bad postures on office workers and its impact on productivity
Juan M Dulce Fernández and Laura M Pimienta Carbonell, Pontificia Universidad Javeriana, Colombia
Research on the relationship between the structural properties of bedding layer in spring mattress and sleep quality
Liming Shen, Yu-xia Chen, Yong Guo, ShiLu Zhong, Fei Fang, Jing Zhao and Tian-Yi Hu, Nanjing Forestry University, Anhui Agricultural University, China

Biomechanics-based active control of bedding support properties and its influence on sleep
D Van Deun, V Verhaert, T Willemen, J Wuyts, J Verbraecken, V Exadaktylos, B Haex and J Vander Sloten, Catholic University of Leuven, Vrije Universiteit Brussel, Antwerp University Hospital and University of Antwerp, Belgium

Study on resilience of mattress foam layer influencing on body pressure distribution characteristic
Y Zhu, L Shen, J Song, Y Sun, Nanjing Forestry University, China

Analysis of ergonomics conditions of a brand of mattress and pillows. University-industrie project, Medellin - Colombia
Luz Mercedes Sáenz Zapata, Ana María Lotero Arias, Emilio Cadavid Guzmán and Martha Arias de L., Pontificia Bolivariana University, Colombia

Body dimension measurements for pillow design for Taiwanese
Hsiao-Lin Chen and Dengchuan Cai, National Yunlin University of Science and Technology, Taiwan

Room: 03

S-EinM 02 - Ergonomics in Manufacturing 2
Chair: J Mateus Junior, Federal University of Santa Catarina, Brazil, Co-chair: Francisco Caceres, University of Las Americas, Ecuador

Cognitive ergonomics: the use of mind mapping tool in maintaining productive sector of a Brazilian paper company
Diego Mattos, José Roberto Mateus Junior and Eugenio Merino, Federal University of Santa Catarina, Brazil

Integrating ergonomics assessments methods and lean manufacturing A3 method: the case of a corrugated sheet industry in Brazil
J Mateus Junior, D de Mattos, E Merino, Federal University of Santa Catarina, Brazil

Ergonomics a noise committee in a pulp and paper industry
J Mateus Junior, D de Mattos, E Merino, F Federle, Federal University of Santa Catarina, Brazil

Analysis of the thermal comfort model in an environment of metal mechanical branch
NM Pinto, AAP Xavier and RT do Amaral, Federal Institute of Espírito Santo, Federal Technological University of Parana, Brazil

Ergonomic analysis in cold storage rooms: a study of case
Hebert Roberto da Silva and Cleudmar Amaral de Araújo, University of Mato Grosso, Federal University of Uberlandia, Brazil

Implementation of an ergonomics program for the welding department inside a car assembly company
Francisco Caceres and Edwin Troya, University of Las Americas, Ecuador

Room: 10

S-HEALTH 05 - Physical Ergonomics in Healthcare
Chair: Simon S. Yeung, Co-chair: Martha Kenny Vélez
Musculoskeletal disorders in caregivers of children with cerebral palsy following a multilevel surgery
Deepak Sharan, PS Ajeesh, R Rameshkumar and M Manjula, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Preventive and curative importance of the baropodometric analysis for the ergonomics and occupational health
Martha Kenny Vélez, Verónica Nolivos and Fabricio Alegría, University of las Américas, Ecuador

Ergonomic and individual risk evaluation
Martha Kenny Vélez, Verónica Nolivos and Fabricio Alegría, University of las Américas, Ecuador

A study of task related fatigue amongst nurses in South African hospitals
A Elliott, Rhodes University, South Africa

Recognizing nurse stakeholder dissonance as a critical determinant of patient safety in new healthcare information technologies
Elizabeth A. Samaras, Sara D. Real, Amber M. Curtis and Tessa S. Meunier, Colorado State University-Pueblo, US

How are nurses at risk?
Elizabeth (Lizzy) M Smith, Airservices Australia, Australia

Room: 05

S-HFSD 02 - Human Factors and Sustainable Development 02

Cooking behaviours: a user observation study to understand energy use and motivate savings
Luis Oliveira, Val Mitchell and Kevin Badni, Loughborough University, UK

The importance of ergonomics to sustainability throughout a building’s life cycle
Linda Miller, Julie Dorsey and Karen Jacobs, EWI Works International Inc., Canada, Ithaca College, Boston University, USA

Ergoeconomy: evolution and challenges
Gabriel García-Acosta, Martha Helena Saravia Pinilla and Carles Riba i Romeva, National University of Colombia, Colombia, Polytechnic University of Catalunya, Spain, Javeriana Polytechnic University, Colombia

The human component of sustainability: a study for assessing “human performances” of energy efficient construction blocks
Erminia Attaianese and Gabriella Duca, University of Naples Federico II, Italy

A utility theory-based approach to reducing raw material usage in non-adjustable artifacts, tasks, and environments
G Nadadur, MB Parkinson, The Pennsylvania State University, USA

Room: 11

S-MSDs 05 - Prevention, disability and return at work
Chair: Jean Pierre Zana

Mitigation of musculoskeletal problems and body discomfort of agricultural workers through educational intervention
Rekha Vyas, Maharana Pratap University of Agriculture & Technology, India
Intervention strategy for reducing musculoskeletal disorders
A Montiel, Mutual Security of the Chilean Chamber of Construction, Chile

Applied ergonomics program manual cut sugarcane
A Kaizer, E Santos, F Ramos, NR Work Ltda, AEDU, Brazil

Swabbing: touchscreen-based input technique for people with hand tremor
Alexander Mertens, Jan Hurtmanns, Chatchavan Wacharamanotham, Martin Kronenbürger, Jan Borchers and Christopher M. Schlick, RWTH Aachen University, Germany

Evaluation of the exercise intervention with the “back school” education program in a Brazilian company of cigars: a study case
Sânzia Bezerra Ribeiro, Djeynefer Silveira Wagmacker and Lilian Becerra de Oliveira, Adventist Faculties of Bahia, Brazil

Low back pain disability and stay at work: contradiction or necessity?
Rosimeire Simprini Padula, Rodrigo Luiz Carregaro, Bruna Melo, Cláudia Regina da Silva and Ana Beatriz Oliveira, São Francisco University, City of São Paulo University, Federal University of Mato Grosso do Sul, Federal University of São Carlos, Brazil

Room: 07

S-ODAM 02 - Implementation and Intervention Strategies, Cross-Cultural issues: Macroergonomics Approaches

Implementation of ergonomics in a service unit: challenges and advances
Eliane Villas Bôas de Freitas Penteado, Maria Goretti de França, Ana Maria de Brito Ramalhoto, Ana Maria de Oliveira, Bruno Rangel Cortopassi Machado and Joana Angélica Matos, Petrobras, Brazil

Implantation of an ergonomics administration system in a company: report of an occupational therapist specialist in ergonomics
Berla Moraes and Valéria Sousa Andrade, Federal University of Paraíba, Federal University of Triângulo Mineiro, Brazil

Organizational ergonomic intervention in the improvement of bin store process in an automotive industry
E Ogasawara, L Baú, G Frohner, S Lazarini and M Moreira, Fisiotrab, VDB, Brazil

The PhOCoe Model – ergonomic pattern mapping in participatory design processes
Marcello Silva e Santos, Federal University of Rio de Janeiro, Brazil

Macroergonomic aspects in the design of development programs in IDCs
Denis A. Coelho, Patricia R. Ferrara, Ana F. Couvinhas, Tânia M. Lima and Jake K. Walter, University of Beira Interior, Portugal, TechnoServe Mozambique, Mozambique, University of Wisconsin-Madison, United States of America

Measuring organizational effectiveness in information and communication technology companies using item response theory
Andréa Cristina Trierweiller, Blênio César Severo Peixe, Rafael Tezza, Vera Lúcia Duarte do Valle Pereira, Waldemar Pacheco Jr., Antonio Cezar Bornia and Dalton Francisco de Andrade, Federal University of Santa Catarina, Santa Catarina State University, Brazil

Room: 12
S-Saf&Hth 05 - Occupational Health and Hazards

Effect of shoe type on descending a curb
Juff George, Michelle Heller and Michael Kuzel, Exponent, Inc., USA

The effect on employees of violence climate in the workplace
Serpil Aytaç and Salih Dursun, Uludag University, Turkey

Indicators of healthy work environments – a systematic review
Per Lindberg and Eva Vingård, Uppsala University, University of Gävle, Sweden

Effects of vibration exposure on professional drivers: a field test for quantifying visual and cognitive performance
N. Costa, PM Arezes and RB Melo, University of Minho, Technical University of Lisbon, Portugal

A study on occupational health hazards of workers in salted vermicelli industry (namkeen) in India
G Tiwari, K Brijwasi, H Rathore and S Singh, Maharana Pratap University of Agriculture and Technology, India

Room: 14

S-WWCS 03 - Ergonomic Interface Design for Computer Users

Online epistemic communities: theoretical and methodological directions for understanding knowledge co-elaboration in new digital spaces
Françoise Détienne, Flore Barcellini, Michael Baker, Jean-Marie Burkhardt and Dominique Fréard, Telecom ParisTech, CNAM, University Paris Descartes, France

Design recommendations for the creation of icons for the elderly
Alexander Mertens, Christopher Brandl, Philipp Przybysz, David Koch-Körfges and Christopher M. Schlick, RWTH Aachen University, Germany

Bivariate pointing movements on large touch screens: investigating the validity of a refined fitts' law
Jennifer Bützler, Sebastian Vetter, Nicole Jochems and Christopher M. Schlick, RWTH Aachen University, Germany

How can multimodality be used to design usable interfaces in IPS² for older employees?
Ulrike Schmuntzsch, Christine Sturm and Matthias Roetting, Technical University of Berlin, Germany

Computer acceptance of older adults
Sibylle Nägle and Ludger Schmidt, University of Kassel, Germany

Training users to counteract phishing
Christopher B. Mayhorn and Patrick G. Nyeste, North Carolina State University, USA

Company Case Studies

Time: 02:30pm – 04:00pm

Room: 04

CCS05 – Company Case Studies: manufacturing ergonomics and closing session

3M Brazil Ergonomics: a success story in the making
N Larson, R Oshiro, and O Camargo, 3M Company, USA

**Ergonomics and design: its principles applied in the industry**  
Ademario Santos Tavares and Francisco Nilson da Silva, Federal University of Campina Grande, Brazil

**A case study of smoke detector assembly work method intervention and evaluation**  
Chuan Sun, Bryan Buchholz and Jeff Thomas, University of Massachusetts Lowell, UTC Fire & Security in Maine, USA

**Participatory ergonomic intervention for prevention of low back pain: assembly line redesign case**  
João Marcos Bernardes, Claudia Wanderck and Antônio Renato Pereira Moro, Universidade Federal de Santa Catarina, Brazil

**Special Session**

**Time:** 02:30pm – 4:30pm

**Brum Auditorium**

**SS08 – Safe patient handling strategies**  
Enrico Occhipinti, Foundation Policlinico Ca’ Granda, Italy

**Ribeira Auditorium**

**SS09 - Development of a score for assessing severity, predicting interventions and Prognosis of musculoskeletal disorders**  
Deepak Sharan and PS Ajeesh, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

**Symposiums**

**Time:** 04:30pm – 06:00pm

**Room:** 13

**S18 Anthropometric survey**  
Chair: Daisy Veitch

**Sizing up Australia: toward a national sizing survey**  
Daisy Veitch, Verna Blewett and David Caple, SHARP Dummies Pty Ltd, Central Queensland University, David Caple & Associates, Australia

**How does the size and shape of local populations in China compare to general anthropometric surveys currently used for product design?**  
Nathan Daniell, François Fraysse and Gunther Paul, University of South Australia, Australia

**Analysis of pilot anthropometric survey data for the Australian Defence Force**  
J. Coleman, Defence Science, Australia

**Anthropometry of Indonesian workers in Jakarta**  
Y. Yanto, Universitas Katolik Indonesia, Indonesia
Anthropometric analysis of wheelchair users: methodological factors which influence interpopulational comparison
Helda Oliveira Barros and Marcelo M Soares, Federal University of Pernambuco, Brazil

Computer re-sampling for demographically representative user populations in anthropometry: a case of doorway and clear floor space widths
Victor Paquet, Caroline Joseph and Clive D'Souza, University at Buffalo, USA

Room: 15

S21 Human Factors and Ergonomics in the Building and Construction Industry
Chair: Gert Faber, Co-chair: Peter Hoonakker

The preparation of the hospitality network of Recife for the 2014 World Cup and the challenges of accessibility
E Calabria and T Silva, Federal Rural University of Pernambuco, Brazil

The elderly in the shopping centers: the usability study of semipublic spaces as attractiveness generator
Maria Cristina Bittencourt, Vera Lúcia Duarte do Valle Pereira and Waldemar Pacheco Jr., Federal University of Santa Catarina, Brazil

Does team lifting increase the variability in peak lumbar compression in ironworkers?
Gert Faber, Steven Visser, Henk F. van der Molen, P. Paul F. M. Kuijer, Marco J. M. Hoozemans, Jaap H. van Dieën and Monique H. W. Frings-Dresen, VU University, University of Amsterdam, Arbouw, The Netherlands, Harvard School of Public Health, Liberty Mutual Research Institute for Safety, Coronel Institute of Occupational Health, Academic Medical Center, USA

Biomechanical modelling and evaluation of construction jobs for performance improvement
Ratri Parida and Pradip Kumar Ray, Indian Institute of Technology Kharagpur, India

Accessibility in collective housing for the elderly: a case study in Portugal
Marie Monique Bruère Paiva and Vilma Villarouco, Federal University of Pernambuco, Brazil

Impact of lightweight and conventional jackhammers on the operator
Naira Campbell-Kyureghyan, Gurjeet Singh, Wilkistar Otieno and Karen Cooper, University of Wisconsin-Milwaukee, USA

Room: 16

S24 Transport Ergonomics and Human Factors 3
Chair: Anabela Simões

Designing dynamic distributed cooperative human-machine systems
A. Lüdtke, D. Javaux, F. Tango, R. Heers, K. Bengler and C. Ronfle-Nadaud, Next Step Solutions, Belgium, Search Center of Fiat, Italy, National School of Civil Aviation 7, France, OFFIS Institute for Information Technology, Visteon Innovation & Technology GmbH, Technical University of Munich, Germany

User acceptance of cooperative maneuver-based driving – a summary of three studies
Michaela Kauer, Benjamin Franz, Michael Schreiber, Ralph Bruder and Sebastian Geyer, Technical University Darmstadt, Germany

How shall we design the future vehicle for Chinese market
DriveID: safety innovation through individuation
Benjamin D. Sawyer, Grace Teo and Mustapha Mouloua, University of Central Florida, USA

Assisted entry mitigates text messaging-based driving detriment
Benjamin D. Sawyer and Peter A. Hancock, University of Central Florida, USA

Assessment of visual demand of typical data entry tasks in automotive navigation systems for iPhone
Manuela Quaresma, Pontifical Catholic University of Rio de Janeiro, Brazil

Room: 17

S27 Gender issues in agricultural work
Chair: Rima R. Habib, Co-Chairs: Fadi Fathallah

Gender involvement in manual material handling (mmh) tasks in agriculture and technology intervention to mitigate the resulting musculo skeletal disorders
Suman Singh, Neelima Sinwal and Hemu Rathore, Maharana Pratap University of Agriculture and Technology, India

Technology interventions for drudgery reduction of gender in Andhra Pradesh
A Nil, Angr Agricultural University, India

Intervention of gender friendly land preparation technologies for drudgery reduction of hill farm women
J Kishtwaria and Aruna Rana, C S K Himachal Pradesh Krishi Vishvavidyalaya Palampur, India

Ergonomic interventions in weeding operations for drudgery reduction of hill farm women of India
J Kishtwaria and Aruna Rana, C S K Himachal Pradesh Krishi Vishvavidyalaya Palampur, India

Migrant women farm workers in the occupational health literature
Rima R. Habib and Fadi A. Fathallah, American University of Beirut, Lebanon, University of California, USA

Assessment of energy balance of Indian farm women in relation to their nutritional profile in lean and peak agricultural seasons
Suman Singh, Sushma Sinwal and Hemu Rathore, Maharana Pratap University of Agriculture and Technology, India

Parallel Sessions

Time: 04:30pm – 06:00pm

Room: 07

S-ODAM 03 - Macroergonomics: Sustainability and Safety Factors in Healthcare and High Risk Organizations

Conditions for the successful integration of human and organizational factors (HOF) in the nuclear safety analysis
Michèle Tosello, Françoise Lévèque, Stéphanie Dutillieu, Guillaume Hernandez and Jean-François Vautier, CEA/Cadarache, CEA/Marcoule, CEA/Fontenay-aux-Roses, INSTM-National Institute for Nuclear Science and Technology, France
Analysis of organizational conditions for risk management: the case study of a petrochemical site
Corinne Gaudart, Alain Garrigou and Karine Chassaing, CBRS - LISE/CREAPT, Department HSE, France, Department of Ergonomics, ENSC-IPB, France

Crucial issues for healthcare and nursing personnel’s sustainable working life development and management: lessons learned
M Shekarin and J Kavian Lanjani, University of Skövde, Sweden

Researcher practioner cooperation for healthy and sustained development in industrial and healthcare organizations: lessons learned
J Kavian Lanjani, Dalarna University, Sweden

Organizational issues that impact on non-use of equipment for individual protection: a view of ergonomics
Eva Bessa Soares, Federal University of Ouro Preto, Brazil

Room: 02

S- AHFE 03 - Human Factors and Ergonomics in Aerospace 3
Chair: Dr. Guy A. Boy, Florida Institute of Technology, USA

The passing of the shift in aircraft maintenance - a task that produces deaths
Reginaldo Campos, Edgard Martins and Marcelo M. Soares, Federal University of Pernambuco, Brazil

Automation under suspicion – case flight AF-447 Air France
Edgard Martins and Marcelo M. Soares, Federal University of Pernambuco, Brazil

Preliminary study of the pilot’s workload during emergency procedures in helicopters air operations
Flávio G. V. Bezerra and Selma L. O. Ribeiro, Technological Institute of Aeronautics (ITA), National Institute for the Spatial and Aeronautical Development, Estácio de Sá University, Brazil

Modeling activities in air traffic control systems: antecedents and consequences of a mid-air collision
Paulo Victor R. de Carvalho and Bemildo Ferreira, Nuclear Engineering Institute, Brazilian Federation of Air Traffic Controllers Association, Brazil

Ergonomics design at workstations of air traffic controllers in a small airport
E Brandão, A Moraes, A Mattos, Pontifical Catholic University of Rio de Janeiro, Brazil

An approach to aircraft seat comfort using interface pressure mapping
Flavia Renata Dantas Alves Silva Ciaccia and Laerte Idal Sznelwar, University of São Paulo, Brazil

Room: 01

S-Aging 04 – Age and work capacity

Sleep disturbances predict long-term changes in musculoskeletal pain among firefighters: a 13-year follow-up study
S Lusa, A Punakallio, H Miranda and R Luukkonen, Finnish Institute of Occupational Health, Finland

Universal design and accessibility: an approach of the influence of muscle strength loss in the risk of falls in the elderly
P Reis, A Moro, V Bins Ely, C Fernandes, J Vilagra, L Peres, O Fogaça Junior, and Eugenio Merino, Federal University of Santa Catarina, Institute of Ensino Superior of Foz do Iguaçu, University of West of Paraná, Technological Federal University of Paraná, North University of Paraná, Brazil
Ergonomics as a tool in prolonging youth and postponing ageing
Ülo Kristjuhan, Tallinn University of Technology, Estonia

An ergonomic approach to improve work conditions of older employees in social housing
Sylvain Biquand and Nadia Heddad, Abilis ergonomie, Université Paris 1-Panthéon Sorbonne, France

Ergonomics, design, accessibility and housing for the elderly
J Fernandes and R Carvalho, Federal University of Rio Grande do Norte, Brazil

Room: 06

S-EAWT 09 – Ergonomic Evaluation of Workstations 1

Ergonomic analysis of the jeweler’s workstation
F Markiewicz, J Câmara and D H Dias, University of the State of Minas Gerais, Brazil

Analysis of determinants in the shipment of energy expenditure of capture in activity in raftsmen Ponta Negra, Natal/RN
T Sousa, M Saldanha, P Dantas and M Oliveira, Federal University of Rio Grande do Norte, Brazil

Ergonomics and environmental sustainability: a case study of raft fisherman activity at Ponta Negra Beach, Natal-RN
Joyce Elanne Mateus Celestino, Cristina de Souza Bispo, Maria Christine Werba Saldanha and Karen Maria da Costa Mattos, Federal University of Rio Grande do Norte, Brazil

Maintenance of submersible pumps in the septic tanks: ergonomic and biological risks to the worker
S Mariño and A Figueiredo, Bahia State University, Federal University of Bahia, National Service for Industrial Training, Brazil

Extension project: contributions to a university hospital system
V Cardoso, B Costa, A Sampaio, W Alencar, Federal University of Amazonas, Brazil

Development of an instrument for assessing workstyle in checkout cashier work (BAIsK)
Katarina Kjellberg, Peter Palm and Malin Josephson, Karolinska Institute, Uppsala University, University of Gävle, Sweden

Room: 04

S-ECED 04 - Important Ergonomic Issues with Children

Backpacks and school children’s obesity: challenges for public health and ergonomics
AJF De Paula, JCP Silva, LC Paschoarelli, JB Fujii, State of São Paulo University, Catholic University of State of Minas Gerais, Brazil

Anthropometric aspects of body seated in school
P Reis, AR Moro, J Da Silva, L Paschoarelli, F Nunes Sobrinho, and L Peres, Federal University of Santa Catarina, College Institute of Foz do Iguaçu, University of West of Paraná, Federal University of Santa Catarina, State of Sao Paulo University, Federal University of Rio de Janeiro

The use software ERGOSHOW in the education of health and safety at work to regardin the safety to children
Sharinna Venturim Zanuncio, Simone Caldas Tavares Mafra, Francisco Rebelo, Ernesto Filgueiras, Federal University of Viçosa, Higher Education Departament of the Ministry of Education and Culture, Federal University of Vicosa, Brazil, Technical University of Lisbon – Portugal
Effects of a school based exercise program on children's resistance and flexibility
RFC Moreira, FH Akagi, PYL Wun, CS Moriguchi and TO Sato, Federal University of Sao Carlos, Brazil

Back pack injuries in Indian school children: risk factors and clinical presentations
Deepak Sharan, PS Ajeesh, Jerrish A Jose, Sukrit Debnath, Manjula M, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Children and teenagers working in artistic labor: Brazilian situation and international examples
S R Cavalcante and R A V Vilela, Sao Paulo University, Brazil

Room: 08

S-EinD 09 – Ergonomic Evaluation on Product Design 2

End users “feedback” to improve ergonomic design of machinery
F.Strambi, M. Bartalini, S. Boy, R. Gauthy, R. Landozzi, D. Novelli and C. Stanzani, Regione Toscana, SindNova, Italy, ETUI, Belgium

Comfort aspects important for the performance and safety of kitesurfing
Lina Lundgren, Sofia Brorsson and Anna-Lisa Osvalder, Halmstad University, Chalmers University of Technology, Sweden

A bus stop shelter evaluated from the user’s perspective
Vera Helena Moro Bins Ely, Jonara Machado de Oliveira and Louise Logsdon, Technology Center, Federal University of Santa Catarina, Brazil

Ergonomic basket design to reduce cumulative trauma disorders in tea leaf plucking operation
N Bhattacharyya and D Chakrabarti, Assam Agricultural University, Indian Institute of Technology, India

Ergonomic evaluation of conventional and improved methods of Aonla pricking with women workers
Arpana Rai, Sudesh Gandhi and D.K.Sharma, COHS, CCSAU, India

Design and technology in the development of potters’ lathes for modeling with terracota: the case of Cabo de Santo Agostinho
GDA Silva, ED Cordeiro, ACR Silva, AQ Andrade, VP Cavalcanti, Federal University of Pernambuco, Brazil

Room: 09

S-EinD 12 – Physical Demand on Ergonomic Design 2

Technology and cognitive ability: the use of new technologies and the design of digital interfaces
Olavo Bessa, Federal University of Rio Grande do Norte, Brazil

Comparison between static maximal force and handbrake pulling force
E Chateauroux and X Wang, University of Lyon, ErgOptim, France

Movement strategy and performance in a high-volume order picking work station
Reinier Könemann, Tim Bosch and Michiel de Looze, TNO, VU University, The Netherlands

A study of the kinematics of ingress and egress of upright and recumbent seats
Christopher Moore, Ashish Nimbarte, Sudhakar Rajulu and Fereydoun Aghazadeh, West Virginia University, NASA, Louisiana State University, USA
Ergonomics and design in a ischial support proposal for the Medellin Metro, Colombia
Luz Mercedes Sáenz Zapata and Andrés Valencia Escobar, Pontificia Bolivariana University, Colombia

Room: 03

S-EinM 03 - Ergonomics in Manufacturing 3
Chair: Kimberly Monroe, KM Ergonomics, LLC, USA, Co-Chair: Luis A. Saavedra-Robinson, Pontifical University Javeriana, Colombia

Successful integration of ergonomics into continuous improvement initiatives
Kimberly Monroe, Faye Fick and Madina Joshi, KM Ergonomics, LLC, Worksite Therapies and Consulting Services, Environmental Health/Safety Corporate Ergonomics, USA

Investigating the effects of physical and cognitive demands on the quality of performance under different pacing levels
S Shaikh, SVG Cobb, D. Golightly, JI Segal and CM Haslegrave, University of Nottingham, UK

DMAICR in an ergonomic risks analysis
E F Santos and C R C Lima, Anhanguera Educacional, Methodist University of Piracicaba, Brazil

Analysis of the lifted weight including height and frequency factors for workers in Colombia
Luis A. Saavedra-Robinson, Leonardo A Quintana J, Fortunato Leal, Luis Díaz and María Niño, Pontifical University Javeriana, Colombia

Predictors of leaving employment at manufacturing companies: results from a prospective cohort study
J Kapellusch, A Garg and K Hegmann, University of Wisconsin, University of Utah, USA

Analysis of the workload imposed on the workers of the imprint and cutting/welding sectors of a flexible packaging manufacturer
L. B. de M. Guimarães, S.L.R. Pessa and C. Biguelini, Federal University of Rio Grande do Sul, Federal Technological University of Parana, Brazil

Room: 10

S-HEALTH 06 - Physical Ergonomics In Healthcare: Manual Handling
Chair: Natale Battevi, Co-chair: Taciana Ramos Luz

Screening of risk from patient manual handling with MAPO method
Natale Battevi and Olga Menoni, University of Milan, Italy

Definition of design criteria of mechanical transfer: an interaction between engineering and health areas
Taciana Ramos Luz and Eliza Helena de Oliveira Echternacht, Federal University of Minas Gerais, Brazil

Biomechanical and organizational risk and prevalence of low back pain in the old adults caregivers of a nursing home in Joao Pessoa, PB
Sânzia Bezerra Ribeiro, Maria Claudia Gatto Cárdia and Lais Cristina Almeida, Adventist College of Bahia, Federal University of Paraiba, Brazilian School of Osteopathy, Brazil

Study of musculoskeletal risks of the office-based surgeries
James E. Hermanson and Sang D. Choi, University of Wisconsin, USA

Quantitative posture analysis of 2D, 3D, and optical microscope visualization methods for microsurgery tasks
Denny Yu, Michael Sackllah, Charles Woolley, Steven Kasten and Thomas Armstrong,
S-HFSD 03 - Human Factors and Sustainable Development 03

User-centered ecotourism development
L Talsma and JFM Molenbroek, Delft University of Technology, The Netherlands

A broader consideration of human factor to enhance sustainable building design
Erminia Attaianese, University of Naples Federico II, Italy

Sustainability and cities: a proposal for implementation of a sustainable town
L. B. de M. Guimarães, Federal University of Rio Grande do Sul, Brazil

VLT: A sustainable solution to urban mobility, in João Pessoa-PB
Uiara Wasconcelos de Assis and Glaucia Wasconcelos Silva, Institute of Higher Education of Brasilia, Brazil

Design and the global and human wellbeing
Geisy Anny Venâncio, Adriano Heemann and Liliane Iten Chaves, Federal University of Parana, Fluminense Federal University, Brazil

Environmental management performance for Brazilian industrials: measuring with the item response theory
Andréa Cristina Trierweiller, Blênio César Severo Peixe, Rafael Tezza, Antonio Cezar Bornia, Dalton Francisco de Andrade and Lucila Maria de Souza Campos, Federal University of Santa Catarina, Santa Catarina State University, Brazil

Room: 11

S-MSDs 06 - MSD Outcomes in different jobs 1
Chair: Wendy Macdonald

Risk factors for sciatic pain among male construction workers
Jens Wahlström, Lage Burström, Tohr Nilsson and Bengt Järvholm, Umeå University, Sweden

Body discomfort in poultry slaughterhouse workers
Adriana Seára Tirloni, Diogo Cunha dos Reis, Joselei Braga dos Santos, Pedro Ferreira Reis, Ailton Barbosa and Antônio Renato Pereira Moro, Federal University of Santa Catarina, Brazil

Effect of low back pain on social and professional life of drivers of Kolkata
Somnath Gangopadhyay and Samrat Dev, University College of Science and Technology, University of Calcutta, India

Computer use and ulnar neuropathy: results from a case-referent study
JH Andersen, P Frost, A Fuglsang-Frederiksen, B Johnson and S Wulff Svendsen, Herning Hospital, Aarhus University Hospital, Denmark

Associations between psychosocial risk factors and musculoskeletal disorders: application to the IT profession in India
Ranjana K. Mehta and Prakriti Parijat, Michigan Technological University, USA, Human Factors International, India

Musculoskeletal symptoms, postural disorders and occupational risk factors: correlation analysis
Maria Luiza C. Comper, Felipe Macedo and Rosimeire S. Padula, Metropolitan Union of Education and Culture, City of São Paulo University, Brazil

Room: 12

S-Saf&Hth 06 - Polices & Regulations in Occupational Health

In regulation we trust
Siri Wiig and Jorunn Elise Tharaldsen, University of Stavanger, Petroleum Safety Authority Norway, Norway

Whistleblowers: an essential resource for the sustainable prevention of risks in socio-technical systems
Tahar Hakim Benchekroun and Sandrine Pierlot, National Conservatory of Arts and Crafts, EDF- R&D, Industrial Risk Management/Human Factors Group, France

The nexus between OSH and subcontracting
Isabel L. Nunes, New University of Lisbon, UNINOVA, Portugal

Ergonomics and quality – an ergonomic quality assessment model for the work station using the parameters established under the Brazilian regulations on ergonomics (NR-17)
Carlos Maurício Duque dos Santos and Pedro Luiz Oliveira Costa Neto, Paulista University, Brazil

Identification of non-technical skills from the resilience engineering perspective: a case study of an electricity distributor
Priscila Wachs, Angela Weber Righi and Tarcisio Abreu Saurin, Federal University of Rio Grande do Sul, Brazil

Struturing of manual of orientations and technical information for laundries of industries of animal products origin
Vania Eugênia da Silva, Simone Caldas Tavares Mafra, Cláudio Lisias Mafra and Amaury Paulo de Souza, Federal University of Vícosa, Brazil

Room: 14

S-WWCS 04 - Visual Ergonomics at Computer Work (Joint Session TC WWCS and TC Visual Ergonomics)

Effects of screen filter on visibility of alphanumeric presentation on CRT and LCD monitors
Aleksandar Zunjic, Ljiljana Ristic and Dragan D. Milanovic, University of Belgrade, Serbia

Incidence and risk factors for symptoms from the eyes among professional computer users
A Toomöngas, M Hagberg, M Heiden, H Richter, KE Westergren and Wigaeus Tornqvist, Karolinska Institute, University of Gävle, University of Gothenburg, Jönköping University, Sweden

VDU workstations and vision in post office and bank operators
Cheikh El- Bachir Tebboune and Bouhafs Mebarki, Universiy of Oran, Algeria

Risk factors for computer visual syndrome (CVS) among operators of two call centers in São Paulo, Brazil
Eduardo Costa Sa, Mario Ferreira Junior and Lys Esther Rocha, University of Sao Paulo, Brazil

Visual challenges using visual display units (VDU) in office landscapes
Magne Helland and Gunnar Horgen, Buskerud University College, Norway

Visual ergonomics and computer work – is it all about computer glasses?
Christina Jonsson, Swedish Work Environment Authority, Sweden
Posters

Time: 01:00pm – 06:00pm

Congress Hall

Area: Ergonomics in Design

Manual bamboo cutting tool
Mariana Pereira Bezerra, Walter Franklin Marques Correia and Fabio Ferreira da Costa Campos, Federal University of Pernambuco, Brazil

The correlation between thermal comfort in buildings and fashion products
Aline Giesel and Patrícia de Mello Souza, State University of Londrina, Paulista State University, Brazil

The incubator hospital from the viewpoint of ergonomic
Sthephany Martins de A. Souza and Vânia Maria Batalha Cardoso, Federal University of Amazonas, Ergodesign Service of University Hospital Getúlio Vargas, Brazil

Usability of car stereo
Bruno Montanari Razza and Luis Carlos Paschoarelli, Maringa State University, Sao Paulo State University, Brazil

The suitability of the design of handbags to the tropical climate
Camila Osugi Cavalcanti de Alencar and Jorge Boueri, University of Sao Paulo, Brazil

Seniors and Technology, ergonomic needs and design considerations
Claudia Isabel Rojas Rodríguez, Pedagogical and Technological University of Colombia, Colombia

Inclusive design in the implementation of projects for schools modernization in Portugal - case studies
Lígia Lopes, Carlos Aguiar and Fernando Moreira da Silva, Technical University of Lisbon

User-centered design (UCD) applied to the identification and modification of unsustainable practices
Mercado Colin Lucila and Rodea Chávez Alejandro, Autonomous Metropolitan University, National Autonomous University of Mexico, Mexico

Perceptual aspects of the use of faucets (taps)
Lívia F. de A. Campos and Luis Carlos Paschoarelli, Paulista State University, Brazil

Colour, vision and ergonomics
Cristina Pinheiro and Fernando Moreira da Silva, Technical University of Lisbon, Portugal

Elderly in public transport - bus ladder
Carla Regina Ferreira, Daniella Barros Dias Sá and Érica Matias da Luz, State University of Minas Gerais, Brazil

A proposal for an ergonomic redesign for a mixer Mondial B-02
Adilson J. Silva Junior and Bruno Barros, Federal University of Pernambuco, Brazil

Cognitive Ergonomics and Production Information Systems under the gaze of interdisciplinary design or industrial design
Luciene Bulhões Mattos, Federal Institute of Bahia, Brazil

Postmen activity's analysis
Fabiola Reinert and Cristina Lucio, Santa Catarina Federal University, Maringa State University, Brazil
Analysis of ergonomic furniture made of wood and sub-products from renewable forests
Luciana Aparecida de Oliveira, Amaury Paulo de Souza, Patrícia Bhering Fialho, Luciano José Minette and Fernanda Freitas Costa de Torres, Federal University of Viçosa, Federal Center of Technological Education of Minas Gerais, Farroupilha Federal Institute, Brazil

Design considerations to improve cognitive ergonomic issues of unmanned vehicle interfaces utilizing video game controllers
P Oppold, M Rupp, M Mouloua, P A Hancock and J Martin, University of Central Florida, USA

An evaluation of keyboard interface types on driver distraction
Audrey Fok, B Sawyer, P Hancock, M Mouloua, University of Central Florida, USA

Area: Ergonomics in Manufacturing

Macroergonomic intervention for work design improvement and raw materials waste reduction in a small footwear components company in Rio Grande do Sul-Brazil
Renata Cornelli and Lia Buarque de Macedo Guimarães, Federal University of Rio Grande do Sul, Brazil

Study about upper limb on highly repetitive work in maquila operations
Francisco Lopez-Millan, Enrique De la Vega, Manuel Rodriguez and Armando Ayala, Technological Institute of Cd. Juarez, Technological Institute of Hermosillo, Mexico

Ergonomic study of an oven operator work post in an oven ceramic industry in Pernambuco
Carlos Vilar, G Colaço, J Silva, J Oliveira, Federal University of Pernambuco, Brazil

Ergonomics aspects and productivity in a Production line: a case study
João Camarotto, R Vanalle, M Lopes, Federal University of Sao Carlos, Brazil

Preponderance and possible factors associated to musculoskeletal symptoms in metals industry workers
Eunice Tokars, Antonio Renato Pereira Moro and Gabriel Grabner dos Santos, Federal University of Santa Catarina, Brazil

The ergonomics approach for thin film transistor-liquid crystal display manufacturing process
Chih-Wei Lu, Chia-Chun Yao and Chein-Wen Kuo, Christian University, Kaohsiung Medical University, Taiwan

Area: Healthcare Ergonomics

Interface of drug use
NO Ludescher, RR Vergilio, CC Lucio and JEG Santos, Maringa State University, São Paulo State University, Brazil

The effect of visualization method on the performance of simulated microsurgery tasks
Denny Yu, Michael E. Sackllah, Charles B. Woolley, Steven J. Kasten, Daniel Kim, Cooper Green and Thomas J. Armstrong, University of Michigan, USA

Static load in the nursing profession; the silent killer?
JJ Knibbe and NE Knibbe, LOCOmotion, The Netherlands

An international validation study of the care thermometer: a tool supporting the quality of ergonomic policies in health care
JJ Knibbe and NE Knibbe, LOCOmotion, The Netherlands

Flying through the Hospital: efficiency and safety of an ergonomic solution
The gap between prescribed work and real work
Andréa Trievereiller, B Azevedo, A Silveira and G Sepúlveda, Federal University of Santa Catarina, Unochapeco, Ensino Superior Complexo f Santa Catarina, Brazil

Ergonomics in the operating room
Jenny Gremark Simonsen, Inger Arvidsson and Catarina Nordander, University Hospital, Sweden

Comparison of index of ability to work (ict) among workers of fixed shifts and shifts with relay
Luciana Duarte Satler de Oliveira and Sarina Occhipinti Magalhães, FUMEC University, Federal University of Minas Gerais, Brazil

Evaluation of the health risks to garment workers in the city of Xambré-PR, Brazil
Marco Antônio Sant’Ana and Fabricio Kovalechen, Ergosalute, Paranaense University, Brazil

Designing the care environment in hospitals and nursing homes: a pilot for a new and reliable method for determining the optimum space to live in and work in
JJ Knibbe and NE Knibbe, LOCOMotion, The Netherlands

The effect of visualization method on the performance of simulated microsurgery tasks
Denny Yu, Michael E. Sackllah, Charles B. Woolley, Steven J. Kasten, Daniel Kim, Cooper Green and Thomas J. Armstrong, University of Michigan, USA

The influence of an abdominal support for a dental stool in the distributions and electrical activity of the longissimus and the superior trapezius muscle in dentists
RAR Custódio, JGT Brandão and JBO Amorim, State University of Sao Paulo, Brazil

Assessments of patients with a 5-category or a 3-category practical classification system: validaty and practicality
JJ Knibbe and NE Knibbe, LOCOMotion, The Netherlands

The businesscase for ergonomic changes in health care: calculating and predicting financial outcome for ergonomic changes and innovations in health care: interactive businesscase modelling
JJ Knibbe and NE Knibbe, LOCOMotion, The Netherlands

Study on workloads of human care worker with the introduction of IT system - the characteristics of work loads by observational research and the suggestions for KAIZEN -
Yuki Mizuno, Toru Yoshikawa, Fumiko Matsuda, Yuriko Takeuchi, Nobuyuki Motegi, Thor Ikegami and Kazuhiro Sakai, Toyo Gakuen University Center for Liberal Arts, The Institute for Science of Labour, ITI Consultancy, Japan

Experimental study of assistant aids and new nursing method in nursing care work
Nobuyuki Motegi, Fumiko Matsuda, Yuriko Takeuchi and Tetsuo Misawa, Institute for Science of Labour, Chiba Institute of Technology, Japan

Human factors methods to reduce medication error: using task analysis in a pediatric and adult pharmacy
Nicole E. Werner, Erik T. Nelson and Deborah A. Boehm-Davis, George Mason University, USA

Ergonomics assessment of dental clinic room at public health system
Eliel Soares Orenha, Suely Mutti Carvalho Naressi, Symone Cristina Teixeira, Enzo Rosetti, José Carlos Plácido da Silva, Mariana Falcão Bormio, Artemis Rodrigues Fontana, Marcelo de Castro Meneghi, Angélica Critiane Búlio Soares and Jerome Rotgans, Paulista State University, University of Campinas, Brazil, RWTH Aachen University, Germany
The ambivalence of the work of the hotel managers: an approach to ergonomics
Cyntia Maria de Gois Leite and Ricardo José Matos de Carvalho, Federal University of Rio Grande do Norte, Brazil

Area: Human Factors and Sustainable Development

Emotions and leadership. Reasons and impact of emotions in organizational context
Meike Siebert-Adzic, University of Kassel, Germany

Harassment at work? Empowerment and autonomy as coping strategies of young workers
Samantha Lemos Turte, Maria Eduarda Cavadinha Correa, Andrea Aparecida da Luz and Frida Marina Fischer, University of Sao Paulo, Brazil

The relationship between heart rate as an indicator of work hardness and results of dynamometry
Nasrin Sadeghi, Hamidreza Tolide-ie and Fatemeh Ghaderi, Gonabad University of Medical Sciences, Shiraz University of Medical Sciences, Iran

The municipal solid waste and the quality of life of collectors of recyclable materials in Juiz de Fora, Minas Gerais
Aline de Barros Pimenta, Sueli Maria dos Reis Santos, Maria Cristina Pinto de Jesus, Marcos Mantins Borges, Geraldo Luciano de Oliveira Marques and José Gustavo Francis Abdalla, Federal University of Juiz de Fora, Brazil

Area: Human Simulation and Virtual Environments

Cognitive-ergonomics and instructional aspects of e-learning courses
Martha Rodrigues, Iana Castello Branco, José Shimioshi, Evaldo Rodrigues, Simone Monteiro and Marcelo Quirino, University of Brasilia, Brazil

Task analysis using an inexpensive marker tracking system-clinical application
Russel Corvese, T Armstrong, J Nicholas and C Woolley, University of Michigan, USA

The ambient intelligence for the sake of accessibility in residential projects: a proper study to the Brazilian scene
JAB Castañon, MPF Maia and MCC Silva, Federal University of Juiz de Fora, Brazil

Augmented reality platform for vehicle interior ergonomics evaluation
Jing Xu, Fan Xiumin and Qiu Shiguang, Shanghai Jiao Tong University, China

Proposal of digital interface for the system of the air conditioner’s remote control: analysis of the system of feedback
Raisa da Silva de Queiroz Pierre, Tarô Arthur Tavares Kawada and André Guimarães Fontes, Instituto de Ensino Superior FUCAPI – CESF, Brazil

Area: Musculoskeletal Disorders

The effects of exercise reminder software program on office workers’ perceived pain level, work performance and quality of life
A Irmak, G Burmin and R Irmak, Hacettepe University, Ahi Evran University, Turkey

Effect of finger interaction on individual finger: index finger
Yong-Ku Kong, Min-Tae Seo, Hyun-Sung Kang and Dae-Min Kim, Sungkyunkwan University, South Korea

Psychosocial indicators among aircraft maintenance workers with and without neck and shoulder musculoskeletal symptoms
A Oliveira, H Nogueira, A Diniz, and D Barbieri, Federal University of Sao Carlos, Brazil

Risk factors, clinical features and outcome of treatment of work related musculoskeletal disorders in on-site clinics among IT companies in India
Deepak Sharan, PS Ajee, R Rameshkumar and Jeena Jose, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Ergonomic recommendations when texting on mobile phones
Ewa Gustafsson, University of Gothenburg, Sweden

Applying a time-limit model of movement frequency to field data: is it possible?
Emmanuelle Turpin-Legendre and Jean-Pierre Meyer, National Institute for Safety and Research, France

Prevalence of cervicobrachial discomforts in elementary school teachers
Bruna Angela Antonelli, Antonio Augusto de Paula Xavier, Paulina Oenning, Michel Henrique Baumer, Tarcisio Fulgêncio Alves da Silva and Luiz Alberto Pilatti, Federal Technological University of Parana, Brazil

Prevalence of discomfort/pain complaints and related factors in dental professionals of the public health service in Araucária, Paraná state, Brazil
Rosimeire Sedrez Bitencourt and Maria Isabel Ricardo, Federal University of Rio Grande do Sul, Federal University of Parana, Brazil

Exposure assessment in different occupational groups at a hospital using quick exposure check (QEC) – a pilot study
Pernilla Ericsson, Martin Björklund and Jens Wahlström, Umeå University Hospital, University of Gävle, Sweden

Musculoskeletal symptoms and work ability among agricultural machinery operators
Daniela Milani and Maria Silvia Monteiro, Federal University of Sao Carlos, Brazil

Musculoskeletal symptoms in workers of a telecom company
Evelise Dias Antunes, Célia Regina Alves de Araújo and Zilda Abage, Institute of Paraná, Uniandrade, Brazil

Musculoskeletal symptoms and workers’ perception about job factors in a pulp and paper industry
Marina Zambon Orpinelli Coluci, Neusa Maria Costa Alexandre and Thais de Freitas Pedrini, University of Campinas, Brazil

Physical variation in low-load work – physiological effects during exposure & recovery
Marcus Yung and Richard Wells, University of Waterloo, Canada

The relationship between cognitive load and musculoskeletal disorders: a case study
Andréa Trierweiller, R Cruz, B Peixe, B Azevedo and A Silveira, Federal University of Santa Catarina, Federal University of Paraná, Unochapeco, Brazil

Raising awareness of psychosocial factors in the occurrence of low back symptoms in developing countries
Baiduri Widanarko, Stephen Legg, Jason Devereux and Mark Stevenson, Massey University, New Zealand, Indonesia University, Indonesia

Low back injuries related to nursing professionals working conditions: a systematic review
Roberta Schlossmacher and Fernando Gonçalves Amaral, Federal University of Rio Grande do Sul, Brazil
Cardiovascular and subjective strain during upper limb endurance tests
E Turpin-Legendre and JP Meyer, Working Life Department, Work Physiology Laboratory, France

Field data for "acceptable" frequency of repetitive task: data to support standardization work
Emmanuelle Turpin-Legendre and Jean-Pierre Meyer, National Institute for Safety and Research, France

Stress and musculoskeletal discomfort among hydrocarbon industry workers in Mexico
R Avila-Chaurand, LR Prado-León and EL González-Muñoz, University of Guadalajara, Mexico

Analysis of the compensatory postures adopted by day caregivers through OWAS - ovako working posture analysing system
Helenara Salvati Bertolossi Moreira, Mauricio Bertolossi Moreira, José Mohamud Vilagra, Isabele Maia Galvão, Abel Santos de Oliveira Júnior and Andrea Cristina de Lima, State University of West of Paraná, Brazil

Keynote speeches

Time: 06:00pm – 07:00pm

Guararapes Auditorium

The challenges of Human-Systems Integration in a complex world: understanding emergent properties of Human-Systems Interactions
Waldemar Karwowski, University of Central Florida, USA

Beberibe Auditorium

How virtual reality is changing the user experience in order to improve technological interfaces
Francisco Rebelo, Technical University of Lisbon, Portugal

Brum Auditorium

Coffee makes the world go around and ergonomics can help do it better
Barbara Silverstein, Washington State Department of Labor and Industries, USA

Ribeira Auditorium

Ergonomics in mining: an experience in Chile
Elías Apud, University of Concepcion, Chile

Wednesday, 15 February

Technical Committee Meetings

Time: 08:30am – 10:30am

Room 04 – Online Communities and Work With Computing Systems
Room 05 - Process Control
Room 11 - Healthcare Ergonomics

Room 13 - Agriculture

Room 14 - Organizational Design and Management

Room 15 - Transport Ergonomics and Human Factors

Workshops

Time: 08:30am – 10:30am

Room: 06

W 09  The OCRA method (Checklist OCRA) and its evolution for the analysis of multiple repetitive tasks
Daniela Colombini, Enrico Occhipinti, Marco Placci, Marco Cerbai and Enrique Alvarez, Foundation Don Gnocchi, Foundation Policlinico Ca’ Granda, Universitat Politecnica de Catalunya, Spain

Time: 8:30am – 12:45pm

Room: 08

W 11  Use of new lumbar movement sensor to evaluate and redesign tasks and equipment
Chris Fitzgerald, Risk & Injury Management Services Pty Ltd, Australia

Room: 09

W 12  Human-centered systems engineering - human factors engineering from lust to dust
George Samaras, Samaras and Associates, Inc., USA

Room: 10

W 13  Ergonomic strategies for managing the exposures associated with the rising rate of obesity in the workforce
Vicki Missar, Aon Risk Solutions, USA

Room: 12

W 14  Interactive session on evaluating ergonomics at school classroom setting on the website
Karen Jacobs, Kapila Jayaratne and Marina Ciccarelli, Boston University, USA, Family Health Bureau, Sri Lanka, Curtin University, Australia

Time: 10:45am – 12:45pm

Room: 06

W 10  Niosh revised lifting equation (RNLE) and its evolution for the analysis of variable lifting tasks
Enrico Occhipinti, Daniela Colombini, Enrique Alvarez, Marco Placci and Marco Cerbai, Foundation Don Gnocchi, Foundation Policlinico Ca’ Granda, Universitat Politecnica de Catalunya, Spain

Symposiums
S28 Ergonomics in automotive industry
Chair: Begoña Toledo Muñoz

Integration of time as a factor in ergonomic simulation
Mario Walther and Begoña Toledo Muñoz, Volkswagen Group, Germany

Metabolic impact of shift work
Ioná Zalcman Zimberg, Silvio A. Fernandes Junior, Cibele Aparecida Crispim, Sergio Tufik and Marco Tulio de Mello, Federal University of Sao Paulo, Multidisciplinary Center for the Study of Sleepiness and Accidents, Federal University of Uberlândia, Brazil

Ergonomic risk assessment with designcheck to evaluate assembly work in different phases of the vehicle development process
Gabriele Winter, Karlheinz G. Schaub, Kay Großmann, Gerhard Laun, Kurt Landau and Ralph Bruder, Technical University Darmstadt, Porsche AG, Germany

The charge of ergonomics – a model according to the influence of ergonomic workplace design for economical and efficient indicators of the automotive industry
Nicole Neubert, Ralph Bruder and Begoña Toledo, Volkswagen Group, Technical University Darmstadt, Germany

Assessing driver’s mental representation of adaptive cruise control (ACC) and its possible effects on behavioural adaptations

Managing ergonomics in the development of rotation between workstations in the Automotive Industry. A balance between health and traceability of tasks
Rodrigo Filus and Luciana Partel, Volkswagen do Brasil, Brazil

S31 NIOSH Consortium Studies of Distal Upper Extremity Musculoskeletal Disorders
Jay Kapellusch (chair)

Risk factors for incident carpal tunnel syndrome: results of a prospective cohort study of newly-hired workers
Bradley Evanoffa, Ann Marie Dalea, Elena Deycha, Daniel Ryana and Alfred Franzblaub, Washington University, University of Michigan, USA

Workplace factors in wrist tendinosis among blue-collar workers? The San Francisco study
C Harris, EA Eisen, R Goldberg, N Krause and D Rempel, Curtin University, Australia, University of California, USA

Relationships between job physical exposure and carpal tunnel syndrome in a prospective cohort: results from the WISTAH hand study
JM Kapellusch, A Garg, KT Hegmann, J Wertsch, A Merryweather, M Thiese and D Bloswick, University of Wisconsin – Milwaukee, University of Utah, USA
Prospective study of carpal tunnel syndrome and physical workload in Washington State workers
BA Silverstein, ZJ Fan, S Bao, CK Smith, DK Bonauto, NL Howard and EA Viikari-Juntura, Washington State Department of Labor and Industries, USA, Finnish Institute of Occupational Health, Finland

Room: 04

S34 Human-Centered Design of Life-Critical Systems 1
Guy A. Boy (chair)

What do we mean by human-centered design of life-critical systems?
Guy A. Boy, Florida Institute of Technology, USA

Complexity analysis of the next gen air traffic management system: trajectory based operations
Rhonda Lyons, Florida Institute of Technology, USA

Improving flight condition situational awareness through human centered design
Carol Craig, Florida Institute of Technology, Craig Technologies, USA

The development of a virtual camera system for astronaut-rover planetary exploration
Donald W. Platt and Guy A. Boy, Florida Institute of Technology, USA

Room: 13

S37 Anthropometry Applied To Ergonomic Design
Chair: Johan Molenbroek

Using experimental design to define boundary manikins
Erik Bertilsson, Dan Högberg and Lars Hanson, University of Skövde, Chalmers University of Technology, Scania, Sweden

Anthropometric change: implications for office ergonomics
Claire C. Gordon and Bruce Bradtmiller, US Army Natick Soldier Center, Anthrotech, USA

Influence of anthropometry on meat-packing plant workers: an approach to the shoulder joint
Pedro Ferreira Reis, Luis Sérgio Peres, Adriana Seára Tirloni, Diogo Cunha dos Reis, Jansen Atier Estrázulas, Mateus Rossato and Antônio Renato Pereira Moro, University of Santa Catarina, Instituto de Ensino Superior de Foz do Iguaçu, University of West of Paraná, State of Amazonas University, Federal University of Amazonas, Brazil

1D and 3D anthropometric data application on public transport vehicle layout and on oil and gas laboratories work environment design
Flávia Pastura, Carla Guimarães, Maria Cristina Zamberlan, Glória Cid, Venênia Santos, Priscilla Streit, Alessandra Paranhos, Rodrigo Cobbe, Kamila Cobbe and Denise Batista, National Institute of Technology (INT), Pontifical Catholic University of Rio de Janeiro, Brazil

Determining anthropometric variables as a tool in the preparation of furniture and designs of interior spaces: the case of children 6 to 11 years old of Vicosa, State of Minas Gerais, Brazil
Sharinna Venturim Zanuncio, Simone Caldas Tavares Mafra, Carlos Emílio Barbosa Antônio, Jugurta Lisboa Filho, Elza Maria Vidigal Guimarães, Vania Eugênia da Silva, Amaury Paulo de Souza and Luciano José Minette, Federal University of Viçosa, Department of the Ministry of Education and Culture, Brazil

Accessibility and ergonomic analysis for banking cash
A Kaizer, F Ramos and E Ferro, NR Work Ltd, Brazil
Room: 14

S40 Ergonomics for Persons with Disabilities 1
Karen Jacobs and Marcelo Soares (co-chairs)

Review of practices for keeping people with disabilities in employment: moving beyond the concept of compensation to implement a developmental approach
Gaëtan Bourmaud and Xavier Rétaux, AXErgonomie, CNAM/TOF/CRTD, France

Ergonomics and the inclusion of people with disabilities in a Brazilian workplace
Francisco de Paula Nunes Sobrinho and Uilielma Ferreira de Lucena, Rio de Janeiro State University, Brazil

Including the people with disabilities at work: a case study of the job of bricklayer in civil construction in Brazil
Laura B Martins, Bruno M Guimarães and Beda Barkokébas Junior, Federal University of Pernambuco, University of Pernambuco, Brazil

Issues concerning scientific production of including people with disabilities at work
Bruno M Guimarães, Laura B Martins and Beda Barkokébas Junior, Federal University of Pernambuco, University of Pernambuco, Brazil

Methodology analysis for a systemic multidisciplinary approach to increase workplace functioning for people with disabilities
M Magno, E Attaianese, G Duca, University of Naples Federico, Italy

Room: 15

S43 Prevention of work-related musculoskeletal disorders in Brazil: results, challenges, and impressions of different experiences (Part I)
Chair: Helenice Jane Cote Gil Coury, Co-chair: Ana Beatriz de Oliveira

Comparison of randomized and non-randomized controlled trials evidence regarding the effectiveness of workplace exercise on musculoskeletal pain control
RFC Moreira, FA Foltran, F Albuquerque-Sendín, MC Mancini and HJCG Coury, Federal University of São Carlos, Federal University of Minas Gerais, Brazil, University of Salamanca, Spain

Teaching ergonomics to undergraduate physical therapy students: new methodologies and impressions of a Brazilian experience
Letícia Holtz Barbosa and Maria Helena Câmara Pinheiro, University Center of Barão de Mauá, University of Ribeirão Preto, Brazil

Postural analysis and psychosocial measurements of federal civil servants of an institution of higher education
Rodrigo Carregaro, Juliano Falcão, Karlla Massuda, Daniely Masunaga, Camila Sinzato, Ana Beatriz de Oliveira and Rosimeire S Padula, Federal University of Mato Grosso do Sul, Federal University of Sao Carlos, City of Sao Paulo University, Brazil

Musculoskeletal disorders and psychosocial risk factors among workers of the aircraft maintenance industry
Helen Cristina Nogueira, Ana Carolina Parise Diniz, Dechristian França Barbieri, Rosimeire Simprini Padula, Rodrigo Luiz Carregaro and Ana Beatriz de Oliveira, Federal University of Sao Carlos, Federal University of Mato Grosso do Sul, City of Sao Paulo University, Brazil
Are cutout handles used when available in real occupational settings? Description of grips and upper extremities movements during industrial box handling
Luciana Cristina da Cunha Bueno Silva, Ana Beatriz Oliveira, Michele Elisabete Rubio Alem, Luis Carlos Paschoarelli and Helenice Jane Cote Gil Coury, University of Sao Carlos, Sao Paulo State University, Brazil

Need for recovery assessment among nursing professionals and call center operators
Cristiane Shinohara Moriguchi, Taísa Trevizani, Roberta de Fátima Carreira Moreira, Leticia Bergamin Januário, Ana Beatriz de Oliveira and Helenice Jane Cote Gil Coury, Federal University of Sao Carlos, Brazil

Room: 16

S46 Transport Ergonomics and Human Factors 4
Chair: Anabela Simões

Decision support for vessel traffic service (VTS): user needs for dynamic risk management in the VTS domain
Gesa Praetorius and Margareta Lützhöft, Chalmers University of Technology, Sweden

Transmitting intended and suggested routes in ship operations: cognitive off-loading by placing knowledge in the world
Thomas Porathe, Chalmers University of Technology, Sweden

New insights, new challenges; person centred transport design
Andree Woodcock, Coventry University, UK

From the “terrain” to “territory”: which contributions from mobility and bus drivers’ activity towards local development?
Liliana Cunha and Marianne Lacomblez, Portuguese Catholic University, University of Porto, Portugal

Ergonomic investigation on pedestrian crossing with traffic light signalization
Giuseppe Amado and Anamaria de Moraes, Fluminense Federal University, Pontifical Catholic University of Rio de Janeiro, Brazil

What does a motorcyclist look at while driving at urban arterials?
Dimitris Nathanael, Evangelia Portouli, Kostas Gkikas and Vassilis Papakostopoulos, National Technical University of Athens, University of the Aegean, Greece

Room: 17

S49 Risk Assessment and Interventions in Agriculture
Chair: Uliara Montedo, Campinas State University, Brazil, Co-Chair: Stefan Pinzke, Swedish University of Agricultural Sciences, Sweden

Ergonomic factors and production target evaluation in eucalyptus timber harvesting operations in mountainous terrains
Amaury Paulo de Souza, Luciano José Minette, André Luis Petean Sanches, Emília Pio da Silva, Valéria Antônia Justino Rodrigues, Luciana Aparecida de Oliveira, Federal University of Viçosa, Brazil

Protective gloves on manual sugar cane cutting are really effective?
RF Abrahão, MC Gonzaga, and OA Braunbeck, Campinas State University, Ministry of Labor and Employment, Brazil
Impacts of introducing a new tool for the manual harvesting of sugar cane: the ergonomic analysis contribution
CDR Souza, ABGJ Filho, RAV Silva, University Center-SENAC, Brazil

Ergonomic rice transplanter for Filipino farmers
Casino Seva, De La Salle University, Philippines

A randomized intervention trial to reduce mechanical exposures in the Colombian flower industry
LH Barrero, C Ceballos, R Ellegast, JA Pulido, M Monroy, S Berrio and LA Quintana, Pontifical University Javeriana, A.R.P. SURA, Colombia, IFA – Institute for Occupational Safety and Health of the German Social Accident Insurance, Germany

Work and technological innovation in organic agriculture
MJA Tereso, RF Abrahão, SFB Gemma, UB Montedo, NL Menegon, JE Guarneti and IAV Ribeiro, Campinas State University, Sao Paulo University, Federal University of Sao Carlos, Brazil

Parallel Sessions

Time: 01:00pm – 02:30pm
Room: 06

S-EAWT 10 – Ergonomic Evaluation of Workstations 2

Multi dimensional system for evaluating preventive program for upper extremity disorders among computer operators
Yafa Levanon, Amit Gefen, Yehuda Lerman, Uri Givon and Navah Z. Ratzon, Tel Aviv University, Sheba Medical Center, Israel

Support of the upper limbs of office workers during a daily work journey
Ernesto Filgueiras, Francisco Rebelo and Fernando Moreira da Silva, Beira Interior University, Technical University of Lisbon, Portugal

Situated modeling in the drawing workshop for bobbin lace
Maria Christine Werba Saldanhari and Juliana Donato de Almeida, Federal University of Rio Grande do Norte, Brazil

Ergonomics work analysis applied to dentistry - a Brazilian case study
RAR Custódio, CES Silva and JGT Brandão, State University of São Paulo, Federal University of Itajubá, Brazil

The overload at work and outside of work: the case of woman operators of blistering
Raoni Rocha Simões and Vitor Guilherme Carneiro Figueiredo, Université Bordeaux 2, France, Federal University of Itajubá, Brazil

Ergonomics analysis of the activity of boning shoulder in a pig slaughter-house in the city of Ipiranga-SC
Lizandra Garcia Lupi Vergara and Thaís Regina Pansera, Federal University of Santa Catarina, Community University of Chapecó, Brazil

Ergonomic evaluation in a values transportation company in Venezuela
Evelin Escalona, Maylem Hernández, Lucia Yanes Escalona, Laura Yanes and Leopoldo Yanes, University of Carabobo, Institute of High Studies in Health “Dr. Arnoldo Gabaldón”, Venezuela

Room: 08
S-EinD 13 – Ergonomic Evaluation of Tools Design

Ergonomic design intervention strategy for work tools development for women agro based workers in northeast India
Deb Kumar Chakrabarti and Nandita Bhattachheriya, Indian Institute of Technology Guwahati, Assam Agricultural University, India

An ergonomic approach to design hand tool for agricultural production
Mahendra Singh Khidija and Awadhesh Bhardwaj, Maharana Pratap University of Agriculture and Technology, Malaviya National Institute of Technology, India

Redesign of the hand tool to reduce fatigue and possible DTA’s in the module of a bakery donuts
J Montoya, Technological Institute of Los Mochis, Mexico

A field experiment comparing mechanical demands of two pruners for flower cutting
S Berrio, LH Barrero and LA Quintana, Pontifical University Javeriana, Colombia

Openability of soft drinks PET packagings
Danilo Corrêa Silva, Luis Carlos Paschoarelli and José Carlos Plácido da Silva, Paulista State University, Brazil

The use of thermal manikin to evaluate interface pressure distribution
Flavia Renata Dantas Alves Silva Ciaccia, Clenilson Jordão Gonçalves and Laerte Idal Sznelwar, University of Sao Paulo, Embraer S.A., Brazil

Room: 09

S-EinD 16 – Ergonomics and the Built Environment

Change of the layout of an office of a metallurgical company: simple projects, big solutions
Luiz Carlos da Silva Duarte, Moacir Eckhardt and Giordano Paulo da Motta, Northwest Regional University of Rio Grande do Sul, Industrial Technical College of Santa Maria, Federal University of Santa Maria, Brazil

Workplace aesthetics: impact of environments upon employee health as compared to ergonomics
Elisabet Schell, Tores Theorell and Helena Saraste, Karolinska Institute, Stockholm University, Sweden

Usability requirements for buildings: a case study on primary schools
Gabriella Duca, University of Naples Federico II, Italy

Ergonomic evaluation of the environment: a case study in a control room of the hydroelectric sector
Christianne Soares Falcão and Marcelo M Soares, Federal University of Pernambuco, Brazil

Evaluating attributes concepts for Build Environment
Gilberto R Oliveira and Claudia Mont’Alvão, Pontifical Catholic University of Rio de Janeiro, Brazil

Room: 03

S-EinM 04 - Ergonomics in Manufacturing 4
Chair: Marcello Silva e Santos, University Complex of Volta Redonda, Brazil, Co-Chair: S.L.R. Pessa, Federal Technological University of Parana, Brazil

The RFad method – a new fatigue recovery time assessment for industrial activities
Marcello Silva e Santos, Mario Cesar Rodriguez Vidal and Sergio Bastos Moreira, University Complex of Volta Redonda, Federal University of Rio de Janeiro, Air Force University, Brazil
Noise analysis in professional office chairs
E J W Alves, J N Filho, S J Silva and J J D Camara, University of the State of Minas Gerais, Brazil

The risk of developing repetitive stress injury in seamstresses, in the clothing industry, under the perspective of ergonomic work analysis: a case study
A S Melo Junior, Ministry of Work and Labor, Brazil

The regulation of work activity and the new labor and production contexts
Elaine Cristina Silva and Paulo Eduardo Gomes Bento, Federal University of São Carlos, Brazil

The footwear factory’s assembly sector: opposing organizational structure and quality from the ergonomic work analysis
Kláudia M. M. N. Silva, Bernardo G. P. Coelho, Josemir V. S. Junior, Luiz F. M. Faria, Ludmila Dutra, Marília Alvarenga, Renan Roggini and Eliza Helena de Oliveira Echternach, Federal University of Minas Gerais, Brazil

Evaluation of the impact of shiftwork and chronotype on the workers of the imprint and cutting/welding sectors of a flexible packaging manufacturer
L. B. de M. Guimarães, S.L.R. Pessa and C. Biguelini, Federal University of Rio Grande do Sul, Federal Technological University of Paraná, Brazil

Room: 10

S-HEALTH 07 - Patient Safety And Quality Of Healthcare
Chair: Pierre Falzon, Co-chair: Henk F. van der Molen

Reducing latent errors, drift errors, and stakeholder dissonance
G M Samaras, Samaras & Associates, Inc., USA

Quality in radiotherapy: effective treatment and patient safety
Adelaide Nascimento and Pierre Falzon, National Conservatory of Arts and Crafts, France

A comparative study of occupancy and patient care quality in four different types of intensive care units in a children’s hospital
Thomas J. Smith, University of Minnesota, USA

Interventions to prevent needle stick injuries among health care workers
Henk F van der Molen, Koos A H Zwinderman, Judith K Sluiter and Monique H W Frings-Dresen, University of Amsterdam, The Netherlands

Managing unforeseen events in anesthesia: collective trade-off between “understanding” and “doing”
L Cuvelier, P Falzon, J C Granry and M C Moll, University Hospital of Angers, France

Room: 11

S-MSDs 07 - MSD Outcomes in different jobs 2
Chair: Ruddy Facci

Nurses’ working tasks and MSDs back symptoms: results from a national survey
Florentino Serranheira, Teresa Cotrim, Victor Rodrigues, Carla Nunes and António Sousa-Uva, New University of Lisbon, Technical University of Lisbon, University of Trás-os-Montes and Alto Douro, Portugal

Investigation of musculoskeletal symptoms in a poultry processing plant
Marcio Marçal and Claudia Mazzoni, Federal University of Health Sciences of Porto Alegre, FUMEC University, Brazil

**Prevalence of musculoskeletal disorders among staffs in specialized healthcare centre**

Nurul Ikhmar Ibrahim and Devinthiran Mohanadas, University of Malaysia Perlis, Malaysia

**Physical and psychosocial indicators among office workers from public sector with and without musculoskeletal symptoms**

Dechristian França Barbieri, Helen Cristina Nogueira, Leticia Januário Bergamin and Ana Beatriz Oliveira, Federal University of Sao Carlos, Brazil

An Ergonomic study on the onset of mental fatigue among the load handling workers of a central market area in Kolkata

Somnath Gangopadhyay and Tamal Das, University College of Science and Technology, University of Calcutta, India

Discrepancies in pain presentation caused by adverse psychosocial conditions as compared to pain due to high physical workload?

Inger Arvidsson, Jenny Gremark Simonsen, Istvan Balogh, Gert-Åke Hansson, Camilla Dahlqvist, Lothy Granqvist, Kerstina Ohlsson, Anna Axmon, Björn Karlson and Catarina Nordander, University Hospital, Sweden

Room: 05

S-HSVE 01 - Human Simulation and Virtual Environments 1

**Adaptive information design for outdoor augmented reality**

Jan A. Neuhöfer, Felix Govaers, Hichem El Mokni and Thomas Alexander, Information Processing and Ergonomics, Germany

**Comparing two types of navigational interfaces for virtual reality**

Luis Teixeira, Elisangela Vilar, Emilia Duarte, Francisco Rebelo and Fernando Moreira da Silva, Technical University of Lisbon, Portugal

On the effect of free vs. restricted interaction during the exploration of virtual environments

Jessica Conradi and Thomas Alexander, Fraunhofer FKIE, Germany

**Evaluating the iterative development of VR/AR human factors tools for manual work**

Paul M. Liston, Alison Kay, Sam Cromie, Chiara Leva, Mirabelle D’Cruz, Harshada Patel, Alyson Langley, Sarah Sharples and Susanna Aromaa, University of Dublin, Ireland, University of Nottingham, England, VTT Technical Research Centre of Finland, Finland

**Preparative study regarding the implementa-tion of a muscular fatigue model in a virtual task simulator**

David Brouillette, Guillaume Thivierge, Denis Marchand and Julie Charland, Dassault Systemes, University of Quebec at Montreal, Canada

A multi-criteria optimization heuristic for improving the quality of project plans

S Tackenberg, S Duckwitz, P Schmitz, S Rieder, Aachen University, Germany

Room: 07

S-ODAM 04 - Workforce flexibility, System Design, and Economics of Human Performance

Analysis of the strain on employees in the retail sector considering work-life balance
Gert Zülch, Patricia Stock and Daniel Schmidt, Karlsruhe Institute of Technology, Germany

Visualization of regulations to support design and quality control – a long-term study
Mikael Blomé, Lund University, Sweden

Macroergonomic analysis of two different work organizations in a same sector of a luminary manufacturer
Rosimeire Sedrez Bitencourt and Lia Buarque de Macedo Guimarães, Federal University of Rio Grande do Sul, Brazil

Macroergonomics’ contribution to the effectiveness of collaborative supply chains
Sandra Mejias Herrera and Luisa Huaccho Huatuco, Central University “Marta Abreu” of Las Villas, Cuba, University of Leeds, Leeds University Business School, UK

Understanding the collaborative-participatory design
Cristiele A. Scariot, Adriano Heemann and Stephania Padovani, University of Paraná, Brazil

Participatory design in lean production: which contribution from employees? For what end?
M.S Perez Toralla, P. Falzon and A. Morais, Conservatoire National des Arts et Métiers, PSA Peugeot Citroën, France

Room: 12

S-Saf&Hth 07 - Special Populations

Ergoberço® (Ergonomics Crib) - evaluation of the prototype for a adaptation to safety's variables and comfort
Simone Caldas Tavares Mafra, Vania Eugênia da Silva and Luciana Aparecida de Oliveira, Federal University of Viçosa, Brazil

Exploring functions of the lost seeking devices for people with dementia
Yung-Ching Chen and Cherng-Yee Leung, Tatung University, Taiwan

Impact of conductive environment on knowledge of mother’s regarding child care
G Tiwari, H Rathore, K Brijwasi and S Singh, Maharana Pratap University of Agriculture and Technology, India

Ergonomic aspects of design of a cap with electronic obstacle detector for use by visually impaired people
N Nascimento, L Salvado and F Borges, Beira Interior University, Portugal, Federal Institute of Paraiba, Brazil

From ‘human being’ to ‘social subject’: “unfreezing” ergonomics and the implications for understanding and intervening health-disease process
Karen Lange Morales and Gabriel García-Acosta, National University of Colombia, Colombia, Darmstadt University of Technology, Germany, Polytechnic University of Catalonia, Spain

Special Sessions

Time: 01:00pm – 2:30pm

Brum Auditorium

SS10 - Ergonomic online digital simulation aspects: an educational game proposal to promote environmental education
D F Arbex, R Jappur, P Selig and G Varvakis, Federal University of Santa Catarina, Brazil

Beberibe Auditorium
SS11 - Professional ergonomist certification around the world
Peter Budnick, Ernst Koningsveld, Kazuo Aoki, Kirsti MacAulay, David Tappin, Trudy Tilbury, Matthias Goebel

Ribeira Auditorium

SS12 - How to use programme theory to evaluate the effectiveness of schemes designed to improve the work environment in small businesses
Stephen Legg, Kirsten Olsen and Peter Hasle, Massey University, New Zealand, National Research Centre for Working Environment, Denmark

Special Sessions

Time: 02:30pm until 04:00pm

Brum Auditorium

SS13 - Process ergonomics analysis in Fiat Group Automobiles: application of international standards from design to production

Virtual Reality tools and statistical analysis for human movements simulation. Application to ergonomics optimization of workcells in the automotive industry
Stefania Spada, Fabrizio Sessa and Francesco Corato, Fiat Group Automobiles, Second University of Naples, Italy

Work activity characterization and laboratory investigation of physical factors for ergonomics
Massimo Di Pardo and Davide Lionello, Fiat Research Centre, Italy

Virtual simulations for ergonomics analysis in Fiat Group Automobiles: digital human modeling methods to improve workcells ergonomics in early process development phases.
S Spada, F Sessa, D Germanà, S Chiapino, L G Galante and A Baracco, Fiat Group Automobiles, University of Turin, Italy

Ergonomics in car assembly process design
S Spada, F Sessa, D Germanà, S Chiapino, L G Galante and A Baracco, Fiat Group Automobiles, University of Turin, Italy

Enhancing cooperation between the industrial world and the academia in the area of ergonomics
M P Cavatorta, L Ghibaudo, P Marchetti, S Spada, M Di Pardo and A Baracco, Politecnico di Torino, Fiat Group Automobile, Fiat Research Centre, Università degli Studi di Torino, Italy

Symposiums

Time: 02:30pm – 04:00pm

Room: 01

S29 Original approach for a session on physical workload in automotive industries 1
Chair: Enrico Occhipinti

Prevention of MSD by means of ergonomic risk assessment (tools) in all phases of the vehicle development process
Schaub Karlheinz, Kugler Michaela, Bierwirth Max, Sinn-Behrendt Andrea and Bruder Ralph Darmstadt University of Technology, Germany
Global ergonomics strategy in Volkswagen: from the product construction, over the planning until the serial process
Begoña Toledo, Volkswagen Group, Germany

Ergonomics at Volkswagen Brasil. Multidisciplinary work to equalize Health, productivity and quality
Rodrigo Filus, Rodrigo Wruca, Vanessa Charleaux, Auro Ortega, Claudio Ferreira, Leandro Jesus, Anderson Stramari, Michel Neufel and Uyara Maia, Volkswagen do Brasil, Brazil

ERGO-MTM model: an integrated approach to set working times based upon standardized working performance and controlled biomechanical load
G Caragnano and L Lavatelli, PricewaterhouseCoopers Advisory SpA, Italy

Interactive production planning and ergonomic assessment with digital human models – introducing the editor for manual work activities (EMA)
Lars Fritzschea, Wolfgang Leidholdtb, Sebastian Bauerb, Thomas Jäckelb and Adrian Morenob, Aimk Automotive, Inc., USA, Bimk Automotive, Germany

Room: 02

S32 Changing Mines for Healthier People
Chair: Andrea Shaw

Digging deeper to establish strong foundations
Verna Blewett, University of South Australia, Australia

Changing minds, changing mines in South Africa
Andrea Shaw and Schu Schutte, Shaw Idea Pty Ltd, Australia, CSIR Center for Mining Innovation, South Africa

Addressing the cultural complexity of OHS in the Australian mining industry
Christine Aickin, Andrea Shaw, Verna Blewett, Laurie Stiller and Stephen Cox, Workability Pty Ltd, Shaw Idea Pty Ltd, University of South Australia, Beyond Words Pty Ltd, Stephen Cox Consulting Pty Ltd, Australia

Using MSD prevention for cultural change in mining: Queensland Government/Anglo Coal Industry Partnership
Trudy Tilbury and Liz Sanderson, DEEDI Mines, AAMC, Australia

Application of ergonomics principles in underground mines through the occupational safety and health management system – OSHMS OHSAS 18.001:2007
Agnaldo Fernando Vieira de Arruda and Leila Maral Gontijo, Federal Institute of Goiás, Federal University of Santa Catarina, Brazil

Room: 04

S35 Human-Centered Design of Life-Critical Systems 2
Chair: Guy A. Boy

Advanced interaction media in nuclear power plant control rooms
Lucas Stephane, Florida Institute of Technology, USA

Automations influence on nuclear power plants: a look at three accidents and how automation played a role
Kara Schmitt, Florida Institute of Technology, USA
Human-machine cooperation: a solution for life-critical Systems?
Patrick Millot and Guy A. Boy, Université de Valenciennes, France, Florida Institute of Technology, USA

Rethinking healthcare as a safety-critical industry
Robert L Wears, University of Florida, USA, Imperial College London, UK

Room: 13

S38 Ergonomics Analysis of Work and Training – Gender considerations
Chair: Catherine Delgoulet, Co-Chair: Marta Santos

Police training course for agents – entry into the profession and also into the distinction between men and women
Joana Castelhano, Marianne Lacomblez, Marta Santos and Camilo Valverde, University of Porto, Portuguese Catholic University, Portugal

Safe and healthy integration into semiskilled jobs: does gender matter?
Marie Laberge, Nicole Vézina and Johanne Saint-Charles, University of Quebec at Montreal, Canada

The entry of women predominantly male professions: when training supports the search of alternative ways of organizing work time
Sónia Nogueira, Marianne Lacomblez, Marta Santos, Liliana Cunha and Joana Castelhano, University of Porto, Portuguese Catholic University, Portugal

Health and safety of students in vocational training in Quebec: a gender issue?
Céline Chatigny, Jessica Riel and Livann Nadon, University of Quebec at Montreal, Canada

The use of a website as an interaction and training device in health, gender and work in schools
Jussara Brito, Mary Yale Neves, Amanda Ornela Hyppolito, Denise Alvarez, Edil Ferreira da Silva, Hélder Muniz, Kátia Reis de Souza, Maristela França and Milton Athayde, Oswaldo Cruz Foundation, tramense Federal University, State University of Paraíba, State University of Rio de Janeiro, Brazil

Room: 14

S41 Ergonomics for Persons with Disabilities 2
Chair: Karen Jacobs, Co-chair: Marcelo Soares

Ergonomic aspects of design of a cap with electronic obstacle detector for use by visually impaired people
N Nascimento, R Salvador, P Araújo, and F Borges, University of Beira Interior, Portugal, Federal Institute of Education, Science and Technology of Paraíba, Brazil

Ergonomics, design universal and fashion
Suzana Barreto Martins and Laura Bezerra Martins, State University of Londrina, Federal University of Pernambuco, Brazil

Design of therapeutic clothing for sensory stimulation of children with psychomotor delay
Ângela Pires and Rui Miguel, University of Beira Interior, Portugal

Colour and Inclusivity: a visual communication design project with older people
Fernando Moreira da Silva, Technical University of Lisbon, Portugal

Chemical toilet for persons with disabilities: proposal for an urban furniture affordable

78
Ademario Santos Tavares and Glielson Nepomuceno Montenegro, Federal University of Campina Grande, Federal University of Campina Grande, Brazil

Inclusive design - assistive technology for people with cerebral palsy
Regina Heidrich and Patrícia Bassani, Laboratory of Inclusion and Ergonomics, University Feevale, Brazil

Room: 15

S44 Prevention of work-related musculoskeletal disorders in Brazil: results, challenges, and impressions of different experiences (Part 2)
Chair: Rosimeire Simprini Padula, Co-chair: Tatiana de Oliveira Sato

The influence of the tasks characteristics in physical performance and psychosocial aspects of workers
Rosimeire Simprini Padula, Juliana Neves Rosina, Cristina Maria Nunes Cabral, Sandra Maria Sbeghen Ferreira de Freitas and Luciana Dias Chiavegato, City of São Paulo University, Brazil

Furniture dimensions and postural overload for schoolchildren’s head, upper back and upper limbs
Mariana Vieira Batistão, Anna Cláudia Sentanin, Cristiane Shinohara Moriguchi, Gert-Åke Hansson, Helenice Jane Cote Gil Coury and Tatiana de Oliveira Sato, Federal University of São Carlos, Brazil, University Hospital, Sweden

Influence of door handles design in effort perception: accessibility and usability
Luis Carlos Paschoarelli, Raquel Santos and Paula Bruno, Paulista State University, Brazil, Technical University of Lisbon, Portugal

Brazilian version of an assessment tool for the evaluation of work organizational aspects (AOT) by the NIOSH WMSD research consortium: translation and application in industrial sectors
Mariana V. Batistão, Carolina C. Alcântara, Isabella G. Pissinato, Michele E. R. Alem and Helenice J. C. G. Coury, Federal University of São Carlos, Brazil

Psychosocial risks: acting upon the organisation by ergonomic intervention
Johann Petit and Bernard Dugué, Bordeaux Institute of Technology, France

Room: 16

S47 Transport Ergonomics and Human Factors 5
Chair: Anabela Simões

Skills of novices early trained or traditionally trained versus experienced drivers confronted to simulated urban accidents’ scenarios
Catherine Berthelon and Loïc Damm, IFSTTAR, France, University of Exeter, United Kingdom

Factors and motives of unsafe behaviors of road users
H Boudrifa, A Bouhafs, M Touil and F Tabtroukia, University of Algiers, Algeria

Assessment of cognitive workload of in-vehicle systems using a visual peripheral and tactile detection task setting
Klaus Bengler, Martin Kohlmann and Christian Lange, Technical University of Munich, Germany, Ergoneers GmbH, Germany

Ergonomic evaluation of a wheelchair transportation securement system
Madiha Ahmed, Naira Campbell-Kyureghyan, Karen Frost and Gina Bertocci, University of Wisconsin-Milwaukee, University of Louisville, USA
SS0 Health Hazards in Agriculture
Chair: Peter Lundqvist, Swedish University of Agricultural Sciences, Sweden; Co-Chair: David O’Neill, University of Loughborough, UK

Thermal comfort and personal protective equipment (PPE)
Ronaldo André Castelo dos S. de Almeida, Marcelo Motta Veiga, Francisco José de Castro Moura Duarte, Luiz Antônio Meirelles and Lilian Bechara Elabars Veiga, Oswaldo Cruz Foundation, Federal University of Rio de Janeiro State, Brazil

Occupational health hazards & efficacy of protective masks in threshing operation
Sudesh Gandhi, M. Dilbaghi, M. Mehta and Neelam Pruthi, Department of Family Resource Management, Department of Textile and Apparel Designing, COHS, CCSAU, India

Family farming workers mental health in a microrregion in southern Brazil
Ângela Regina Poletto and Leila Amaral Gontijo, Federal Institute of Education, Federal University of Santa Catarina, Brazil

Pesticide exposure and sprayer’s task goals: comparison between vineyards and greenhouses
Mandy Lambert, James Richardson and Sonia Grimbuhler, Cemagref, University Paris Sud XI, France

Reducing orchard workers exposure to pesticide products: an ergo-toxicological approach
S Grimbuhler, J Richardson, F Darses, C Moget, University of Paris-Sud, France

Parallel Sessions

Time: 02:30pm – 04:00pm

Room: 06

S-EAWT 11 – Ergonomics in Complex Systems 1

Investigation of the impact of main control room digitalization on operators cognitive reliability in nuclear power plants
Yong Zhou, HaiYing Mu, Jianjun Jiang and Li Zhang, Civil Aviation Flight University of China, University of South China, KangDa Vocational Technical College, China

Competing values, tensions and trade-offs in management of nuclear power plants
Teemu Reiman and Carl Rollenhagen, VTT Technical Research Centre of Finland, Royal Institute of Technology, Academy for Nuclear Safety, Sweden

The contribution of ergonomics to risk analysis in the design process: the case of a future control room
Cecilia De la Garza, Jean-Paul Labarthe and Louis Graglia, Risk Management Department, EDF R&D, France

From needs to requirements for computer systems: the added value of ergonomics in needs analysis
Stanislas Couix, Françoise Darses and Cecilia De-La-Garza, National Conservatory of Arts and Crafts, Institute of Biomedical Research of the Armed Forces, Ministry of Defence, Management of Industrial Risks, EDF R&D, France

Ergonomists’ contribution in requirements definition for the design of a computer based system in a control room
S Couix, C De la Garza and F Darses, Conservatoire National des Arts et Métiers, Electricité de France, Laboratoire d'Informatique pour la Mécanique et les Sciences de l'Ingénieur, France

Pre-salt and human factors: a review of contributions of ergonomics for the technological challenges of exploration and production in Brazil
D Silveira and E Brandao, Fluminense Federal University, Brazil

Room: 08

S-EinD 14 - Design for Special Population 1

The hierarchy of needs to inclusive design
Júlio Carlos de Souza van der Linden and Clariana Fischer Brendler, Federal University of Rio Grande do Sul, Brazil

Designing from activities. the “ability/difficulty table”, a useful tool to detect the “limit users” in the design for all approach
Giuseppe Di Bucchianico, Marco Gregori and Emilio Rossi, University of Chieti-Pescara, Italy

“EWS Matrix” e “EWG Matrix”: “de-sign for all” tools referred to the development of a enabling communication system for public spaces
Giuseppe Di Bucchianico, Stefania Camplone, Stefano Picciani and Valeria Vallese, University of Chieti-Pescara, Italy

Ergonomics and design for all
Isabella Tiziana Steffan and Francesca Tosi, Studio Steffan – Design & Research, University of Florence, Italy

The user testing toolset: a decision support system to aid the evaluation of assistive technology products
Andree Woodcock, Simon Fielden and Richard Bartlett, Coventry School of Art and Design Coventry University, Coventry University, UK

Auxiliary locomotion device to unload lower limbs, using user’s own secondary support
Eduardo J W Alves, Leandro E V Melo, Sérgio J Silva, Jairo J D Câmara, University of the State of Minas Gerais, Brazil

Room: 09

S-EinD 17 – Ergonomics for the Automotive Industry

Development of objective discomfort evaluation indicators for a task-oriented motion using less constrained motion concept: application to automotive pedal clutching task
Pannetier Romain and Wang Xuguang, University of Lyon, Renault SAS, France

Three experiments to support the design of lightweight comfortable vehicle seats
P Vink, M Franz, I Kamp and R Zenk, Delft University of Technology, The Netherlands, BMW AG, Germany

Patterns of correlation between vehicle occupant seat pressure and anthropometry
Gunther Paul, Nathan Daniell and François Fraysse, University of South Australia, Australia

Multi-platform experiment to cross a boundary between laboratory and real situational studies: experimental discussion of cross-situational consistency of driving behaviors
H Terai, K Miwa, H Okuda, Y Tazaki, T Suzuki, K Kojima, J Morita, A Maehigashi, and K Takeda, Nagoya University, Waseda University, Japan Advanced Institute of Science and Technology, Japan Science and Technology Agency, Japan
Ergonomic evaluation of interior design of shoka vehicle and proposing recommendations for improvement
Adel Mazloumi and Fallah Mohammadreze, Tehran University of Medical Sciences, Rehabilitation and Welfare University, Iran

Adoption of ergonomic features in a new reach truck cabin design – a usability study
Maral Babapour, Anna-Lisa Osvalder and Lars-Ola Bligård, Chalmers University of Technology, Sweden

Room: 03

S-EinM 05 - Ergonomics in Manufacturing 5
Chair: Dino Bortot, Technische Universität München, Germany, Co-chair: Sara Figueira, New University of Lisbon, Portugal

Human motion behavior while interacting with an industrial robot
Dino Bortot, Hao Ding, Alexandros Antonopolous and Klaus Bengler, Technische Universität München, University of Kassel, Germany

Ergonomics in the formation of work condition quality
Adam Görny, Poznan University of Technology, Poland

The key to success in ergonomic interventions
D Delaruelle, Mensura EDPB Belgium

Integration of human factors principles in LARG organizations – a conceptual model
Sara Figueira, V Cruz Machado and Isabel L Nunes, New University of Lisbon, Portugal

Production layout improvement in emergency services: a participatory approach
Mateus Zanatta and Fernando Gonçalves Amaral, Federal University of Rio Grande do Sul, Brazil

Ergonomic analysis of workplaces in the iron casting industrial pole in Claudio, Minas Gerais, Brazil
Artur Caron Mottin, Carlos Alberto Silva de Miranda, Caroline Salvan Pagnan and Olavo Pena Monken, State University of Minas Gerais, Brazil

Room: 10

S-HEALTH 08 - Special Topics in Healthcare 1
Chair: V Gnaneswaren, Co-chair: Tim Willemen

Relation between perceived and actual force in a simulated dental task
V Gnaneswaren and R R Bishu, University of Nebraska, USA

Improving wheelchair prescription: an analysis of user needs and existing tools
Louise Moody, Andree Woodcock, Mike Heelis, Cynthia Chichi, Simon Fielden and Dimitar Stefanov, Birmingham Community Healthcare NHS Trust, Coventry University, UK

Automatic sleep stage classification based on easy to register signals as a validation tool for ergonomic steering in smart bedding systems
Tim Willemen, Dorien Van Deun, Vincent Verhaert, Sandra Pirrera, Vasileios Exadaktylos, Johan Verbraecken, Bart Haex and Jos Vander Sloten, Catholic University Leuven, Vrije Universiteit Antwerp University Hospital, University of Antwerp, Belgium

The impacts of painful noise in the apprehension of sound references on context of a big band
Horizontal plane sound source localization and auditory enhancement  
Jan R Smith, Wesley R Lombard and Moses N Shaba, Ergonomics Technologies, South Africa

Moral harassment of public schools teachers  
Izabel Carolina Martins Campos, Alessandra da Cruz Serafim, Kamilla Valler Custódio, Lizandra da Silva and Roberto Moraes Cruz, Federal University of Santa Catarina, State Secretary of Administration's Office, Brazil

Room: 05

S-HSVE 02 - Human Simulation and Virtual Environments 2

Virtual reality systems specifications for human machine interaction design in industry  
Susanna Aromaa, Juhani Viitaniemi and Kaj Helin, VTT Technical Research Centre of Finland, Finland

New enhancements and validation of force based posture and discomfort predictions  
Hans-Joachim Wirsching and Florian Engstler, Ergonomic Simulation Department, Human Solutions, Technical University Munich, Germany

DHM in human-centered product design: a case-study on public transport vehicle  
V Santos, C P Guimarães, G A N Franca, G L Cid, A G Paranhos, National Institute of Technology, Pontifical Catholic University of Rio de Janeiro, Brazil

DHM simulation in virtual environments: a case-study on control room design  
M Zamberlan, V Santos, P Streit, J Oliveira, R Cury, T Negri, F Pastura, C Guimarães and G Cid, National Institute of Technology, Pontifical Catholic University of Rio de Janeiro, Brazil

Digital test assembly of truck parts with the IMMA-tool - an illustrative case  
L Hanson, D Högberg and M Söderholm, Scania CV AB, Chalmers University of Technology, University of Skövde, Sweden

Features and limitations of digital human models - a new German guideline -  
Gert Zülch, Karlsruhe Institute of Technology, Germany

Room: 11

S-MSDs 08 - Risk for MSD in different tasks and jobs – 1  
Chair: Daniela Colombini

Reducing whole body vibration in forklift drivers  
R Motmans, Department of Ergonomics, IDEWE, Belgium

Analysis of urban cleanness agents’ workstation on the appearance of work related musculoskeletal disorders  
Leonildo Santos do Nascimento Júnior and Juliana da Costa Santos Pessoa, University of Minho, Portugal, Universitary Center of João Pessoa, Brazil

Evaluation and redesign of manual material handling in a vaccine production centre’s warehouse  
Yaniel Torres and Silvio Viña, ErgoCuba research team, Institute of Technology, Cuba

Biomechanical analysis of loading/unloading a ladder on a truck
Cristiane Shinohara Moriguchi, Leticia Carnaz, Luiz Carlos de Miranda Junior, Richard William Marklin and Helenice Jane Cote Gil Coury, Federal University of São Carlos, State University of Campinas, Brazil, Marquette University, USA

Room: 07

S-ODAM 05 - Sustainability of Work Systems: Optimizing Human and System Performance

The workers role in knowledge management and sustainability policies
Ivan Bolis, Claudio Brunoro and Laerte Idal Sznelwar, University of Sao Paulo, Brazil

Ergonomic sustainability based on the ergonomic maturity level measurement
Mario Cesar Vidal, Carmen Lucia Campos Guizze, Renato José Bonfatti and Marcello Silva e Santos, Federal University of Rio de Janeiro, Fluminense Federal University, Oswaldo Cruz Foundation, Brazil

How could you use the ergonomics ‘know-how’ transfer management to enhance human working for sustainable improvements in industrially developing countries?
Faramarz Helali, Luleå University of Technology, Sweden

Sustainable development induction in organizations: a convergence analysis of ISO standards management tools’ parameters
Fabrício Kurman Merlin, Vera Lúcia Duarte do Valle Pereira and Waldemar Pacheco Júnior, Santa Catarina Federal University, Brazil

Involvement and emancipation of the worker. Action research in a university hospital
Ivan Bolis, Claudio Brunoro and Laerte Idal Sznelwar, University of Sao Paulo, Brazil

Partning for workplace health and safety
Verna Blewett and Jill Dorrian, Central Queensland University, University of South Australia, Australia

Room: 12

S-Saf&Hth 08 - Workers’ Health

Risk evaluation and exposure control of mineral dust containing free crystalline silica: a study case at a quarry in the Recife metropolitan area
Mario Lira, Rabbani Kohlman, Beda Barkokébas Junior and Eliane Lago, University of Pernambuco, Brazil

Design for worksystem safety using employees’ perception about safety
J Maiti, Indian Institute of Technology Kharagpur, India

Forum: social network for the surveillance and prevention of workplace accidents
R A G Vilela, I M Almeida, A Nunes da Silva, M H P Gomes, H Prado, E Buoso, M D Dias, S Cavalcante and L E Lacorte, Sao Paulo University, Botucatu School of Medicine, Cerest Piracicaba, Brazil

Ports of Mucuripe and Pecém, Ceará, Brazil: restructuring process and its impact on workers’ health
Regina Heloisa Maciel, Marselle Fernandes Fontenelle, Rosemary Cavalcante Gonçalves, Taise Araújo Lopes, Tuany Maria Sousa Moura and Felipe Mendes Monteiro, University of Fortaleza, Brazil

From prescribed to real rotations: a means of collective protection for the health of workers in a soft drink factory
R Simões, F Daniellou and A Nascimento, Universiy Bordeaux 2, National Conservatory of Arts and Crafts, France
Human reliability in petrochemical industry: an action research
João Alexandre Pinheiro Silva and João Alberto Camarotto, Escola Superior of Engineering and Management, Federal University of São Carlos, Brazil

Symposiums

Time: 04:30pm – 06:00pm

Room: 01

S30 Original approach for a session on physical workload in automotive industries 2
Chair: Karlheinz Schaub, Darmstadt University of Technology, Germany

MultiplPa – a tool for the combined overall estimation of various types of manual handling tasks
Karlheinz Schaub, Max Bierwirth, Michaela Kugler and Ralph Bruder, Darmstadt University of Technology, Germany

Correlations in between EAWS and OCRA index concerning the repetitive loads of the upper limbs in automobile manufacturing industries
Ivan Lavatelli, Karlheinz Schaub and Gabriele Caragnano, AMI - Associazione MTM Italia, Institute of Ergonomics, University of Technology, Germany, International MTM Directorate, USA

Ergonomics and workplace design: application of Ergo-UAS system in Fiat Group Automobiles
M Vitello, L G Galante, M Capoccia and G Caragnano, Fiat Group Automobiles, PricewaterhouseCoopers Advisory Spa, Italy

Room: 02

S33 Healthcare Information Technology Implementation
Co-chairs: Patrick Waterson, Peter Hoonakker and Pascale Carayon

Challenges to care coordination posed by the use of multiple health IT applications
Pascale Carayon, Bashar Alyousef, Peter Hoonakker, Ann Schoofs Hundt, Randi Cartmill, Janet Tomcavage, Andrea Hassol, Kimberly Chaundy, Sharon Larson, Jim Younkin and James Walker, University of Wisconsin-Madison, Geisinger Health System, Abt Associates, Geisinger Health Plan, SAMHSA, USA

Computer decision support tools in primary care
Peter Hoonakker, Adjhaporn Khunlertkit, Matthew Tattersal and Jon Keevil, University of Wisconsin-Madison, USA

Considering social ergonomics: the effects of hit on interpersonal relationships between patients and clinicians
Enid Montague, Onur Asan, UW-Madison, USA

Can we make health IT safe enough for patients?
Robert L Wears, University of Florida, USA, Imperial College London, UK

Using hit to deliver integrated care for the frail elderly in the UK: current barriers and future challenges
Patrick Waterson, Ken Eason, Dylan Tutt and Mike Dent, Loughborough University, University of Reading, Staffordshire University, UK

Spin your science into gold: direct to consumer marketing within social media platforms
David Egilman and Nicholas M Druar, Brown University, Never Again Consulting, USA
Room: 04

S36 Ergonomics Analysis of Work and Training: Part 3 - Analysis, evaluation, and dissemination of effective training practices
Chair: Jussara Brito, Co-chairs: Dominique Cau-Bareille

Evaluating work and training within an intercommunicating process of change: reflections drawn from a case study on a chemicals industrial company in Portugal
Ricardo Vasconcelos, Daniel Silva, Ricardo Pinto and Sérgio Duarte, University of Porto, Portugal

Ergonomic analysis of work activity for the purpose of developing training programs: the contribution of ergonomics to vocational didactics
Sylvie Ouellet, Institut de recherche Robert-Sauvé en santé et en sécurité du travail, Canada

Instruments of trainers’ activity: the use of refentials in processes of recognition and validation of prior learning
Joana Fernandes and Marta Santos, Oporto University, Portuguese Catholic University, Portugal

Proposal for training of workers and researchers as from the participatory return of research results in workers’ health
Joseane Pessanha Ferreira, Claudia Osorio da Silva e Lúcia Rotenberg, Oswaldo Cruz Foundation, Fluminense Federal University, Brazil

“Meetings on the work”: an analysis device for understanding the articulation between outsourcing and other organizational innovations
Denise Alvarez and Marcelo Figueiredo, Fluminense Federal University, Brazil

Room: 13

S39 Ergonomic aspects of Clinical and Surgical Procedures
Chair: Thomas J. Armstrong, Co-chair: David Rempel

Disparities between industrial and surgical ergonomics
F Jacob Seagull, University of Michigan Medical School, USA

Standardization of surgical procedures for identifying best practices and training
T Armstrong, D Yu, A Frischknecht, R Minter, P Andreatta and S. Kasten, University of Michigan, USA

Distal upper extremity musculoskeletal risk factors associated with colonoscopy
David Rempel, David Lee and Amandeep Shergill, University of California, VA Hospital, USA

Ergonomic considerations in natural orifice translumenal endoscopic surgery (NOTES): a case study
Cristina Tessier, Likun Zhang and Caroline GL Cao, Tufts University, United States

Ergonomic risk assessment of nasogastric tube placement and implications for design and training
Oliver Anderson, Peter Buckle and George Hanna, Imperial College London, UK

Ergonomics of novices and experts during simulated endotracheal intubation
Adam de Laveaga, Michael C Wadman, Laura Wirth and M Susan Hallbeck, University of Nebraska, USA

Room: 14

S42 Ergonomics for Persons with Disabilities 3
Perceived environmental restrictions for the participation of children with mild developmental disabilities
N Ratzon, L Rosenberg, O Brat, T Jarus, Tel Aviv University, Israel

Inclusion of people with disabilities in the production system of a footwear industry
R S Bitencourt and L B de M Guimarães, Federal University of Rio Grande do Sul, Brazil

Research the mobile phone operation interfaces for vision-impairment
Yen-Ting Yao and Cherng-Yee Leung, Tatung University, Republic of China

Fixation system and accommodate wheelchair during bus transportation
V Cardoso and D Silva, Federal University of Amazonas, Brazil

Socio-demographic profile and ability to work in workers with disabilities in physics University of Paraíba-UFPB/BR
M P Almeida, Federal University of Paraíba, Brazil

S45 Interactive research as a means for ergonomic improvement of large-scale work systems
Chair: Johan Karltn

Outcome measures and prognosis of WRMSD
Jerrish A Jose, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Supervisors in ergonomic change of meat cutting work
K Vogel, KTH Royal Institute of Technology, Sweden

New ways of organizing product introductions
Martina Berglund, Ulrika Harlin, Maria Gustavsson and Kristina Säfsten, Linköping University, Chalmers University of Technology, Jönköping University, Sweden

Ten years of experience from interactive ergonomics projects
J. Eklund and J. Karltn, Royal Institute of Technology, Jönköping University, Sweden

S48 Transport Ergonomics and Human Factors 6
Chair: Anabela Simões

Ergonomics applied to flight attendants in South American airline
Mónica Zambrano Vélez, ERGIOS, Colombia

Aircraft accident investigation: the decision-making in initial action scenario
Marcia M. Barreto and Selma L O Ribeiro, Technological Institute of Aeronautics, National Institute for the Spatial and Aeronautical Development, Estácio de Sá University, Brazil

Aircraft seating comfort: the influence of seat pitch on passengers’ well-being
Florian Kremser, Fabian Guenzkofer, Claudia Sedlmeier, Olaf Sabbah and Klaus Bengler, Technical University of Munich, RECARO Aircraft Seating GmbH & Co.KG, Germany

Research of injuries of passengers in city buses as a consequence of non-collision effects
Aleksandar Zunjic, Vladimir Sremcevic, Vera Zeravcic Sijacki and Ana Sijacki, University of Belgrade, Serbia
Low-floor bus design preferences of walking aid users during simulated boarding and alighting
Clive D’Souza, Victor Paquet, James Lenker, Edward Steinfeld and Piyush Bareria, University at Buffalo, USA

Room: 17

551 Innovation and Intervention Evaluation in Agriculture
Chair: David O’Neill, University of Loughborough, UK, Co-Chair: Lotta Löfqvist, Swedish University of Agricultural Sciences, Sweden

Intervention of drudgery reducing technologies in agriculture and impact evaluation
Manju mehta, Sudesh gandhi and Mamta dilbaghi, College of Home Science, CCS Haryana Agricultural University, India

Innovation – decision behaviour of tribal women of Udaipur district regarding vermiculture technology
Latika Vyas, Maharana Pratap University of Agriculture and Technology, India

Usability study of a vineyard teleoperation compost spreader
Ester Ferrari and Eugenio Cavallo, Italian National Research Council, Italy

Difficulties related to work in the certification process for organic production
Sandra Francisca Bezerra Gemma, University of Campinas, Brazil

An ergonomics approach to citrus harvest mechanization
Simone Emmanuelle Alves Costa and João Alberto Camarotto, Federal University of Sao Carlos, Brazil

Room: 03

563 How assess an Employee with Work Related Musculoskeletal Disorder?
Chair: Deepak Sharan

Assessment of psychosocial risk factors
Deepak Sharan, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Physical examination, Special tests and Investigations for the diagnosis of WRMSD
Deepak Sharan, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Ergonomic Workplace Analysis (EWA)
Deepak Sharan, Deepak Sharan, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

History Taking
Jerrish A Jose, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

Parallel Sessions

Time: 04:30pm – 06:00pm

Room: 06

S-EAWT 12 – Ergonomics in Complex Systems 2

Work ability index and its association with psychosocial factors in one of the petrochemical industries in Iran
A Mazloumi, Tehran University of Medical Science, Iran

**New procedures of ergonomics design in a large oil company**
Cynthia Mossé Alhadeff, Rosana Fernandes da Silva and Márcia Sales dos Reis, Petrobras, Petróleo Brasileiro S.A., Brazil

**Human factors engineering in oil and gas - a review of industry guidance**
Martin Robb and Gerald Miller, Human Factors Team, Independent Maritime Professional, Ge Miller & Associates, USA

**Ergonomics in designing process: dialogue between designers, executors and users in the maintenance activity of radars in an oil refinery**
Fabrício Augusto Menegon, Daniela da Silva Rodrigues, Andréa Regina Martins Fontes and Nilton Luiz Menegon, Federal University of Itajubá, Brazil

**Analysis of the implementation of ergonomic design at the new units of an oil refinery**
Carolina Reich Marcon Passero, Érika Lye Ogasawara, Lucy Mara Silva Baú, Sandro Artur Buso and Marcos Cesar Bianchi, Petrobras, Petrobras, Petróleo Brasileiro S.A., Fisiotrab Ergonomics, Health and Safety at Work, Brazil

**The emergency system for the town of Milano: evaluation of a help point**
Isabella Tiziana Steffan, Studio Steffan - Progettazione & Ricerca, Italy

Room: 08

**S-EinD 15 Ergonomics and Accessibility**

**Evaluation of spatial accessibility around the University Hospital of Santa Maria - RS**
S Brondani, Federal University of Santa Maria, Brazil

**A conceptual model for barrier free facilities planning**
RS Bittencourt and L B de M Guimarães, Federal University of Rio Grande do Sul, Brazil

**Ergonomics issues in conceiving an accessible project**
A L Costa, P V Coura, M M A Gomes, Y R Peregrino, B R Sarmento and R A Sousa, Federal University of Paraíba, Brazil

**Accessibility and participatory ergonomics in workplaces and surrounding space**
C Rojas, Pedagogical and Technological University of Colombia, Colombia

**Minimum housing spaces, flexibility and sustainability: a reflection on the basis of ergonomics intervention**
Rayssa Cristiane Oliveira and Gleice Azambuja Elali, Federal University of Rio Grande do Norte, Brazil

**Ergonomics and accessibility for people with visual impairment in hotels**
Larissa Nascimento dos Santos and Ricardo José Matos de Carvalho, Federal University of Rio Grande do Norte, Brazil

Room: 09

**S-EinD 18 Ergonomics, Design and Innovation**

**Experimenting new design languages in contemporary home design**
Francesca Tosi and Alessandra Rinaldi, University of Florence, Spring Design®, Italy
The intermodal bike: multi-modal integration of cycling mobility through product and process innovations in bicycle design
Francesca Tosi, Alessandro Belli, Alessandra Rinaldi and Grazia Tucci, University of Florence, Tecnologie Urbane Srl, Spring Design®, Italy

Ergonomic and usability analysis on a sample of automobile dashboards
Raíssa Carvalho and Marcelo M Soares, Federal University of Pernambuco, Brazil

Towards the application of interaction design to digital TV content development
Anelise Thaler, Paloma Maria Santos, Marcus de Melo Braga and Francisco A P Fialho, Federal University of Santa Catarina, Brazil

Interface design and contemporary human creating new guidelines for high-tech products
Andrea Salvan Pagnan, Giovana Freitas Rabelo Ribeiro, Maria Goretti Souza Gonçalves, Jairo José Drummond Câmara and Sandra Motta Baptista, State University of Minas Gerais, Brazil

An ergonomic study on the navigation structure and information units of websites with multimedia content. A case study of the Xbox 360 promotional website
Eduardo Ariel and Anamaria de Moraes, School of Advertising and Marketing, Pontifical Catholic University of Rio de Janeiro, Brazil

Room: 03

S-EinM 06 - Ergonomics in Manufacturing 6
Chair: Mikael Forsman, Karolinska Institute, Sweden, Co-chair: Erminia Attaianese, University of Naples Federico II, Italy

The integrated assessment of occupational risks in a pharmaceutical manufacturing plant
Erminia Attaianese and Gabriella Duca, University of Naples Federico II, Italy

Ergonomic evaluation of processes and products in the manufacture of upholstery
Patrícia Bhering Fialho, Amaury Paulo de Souza, Luciano José Minette, José de Castro Silva, Luciana Aparecida de Oliveira, Federal Center of Technological Education of Minas Gerais, Federal University of Viçosa, Brazil

A Socio-technical approach for improving a Brazilian shoe manufacturing system
J S Renner’ L B M Guimarães and P A B de Oliveira, Feevale University, Federal University of Rio Grande do Sul, Brazil

Participative development of packages in the food industry – evaluation of ergonomics and productivity by objective measurements
Mikael Forsman, Eva Bernmark, Birgitta Nilsson, Sandra Pousette, Svend Erik Mathiassen, Karolinska Institute, University of Gävle, Innventia AB, Sweden

Ergonomics and Kaizen as strategies for competitiveness: a theoretical and practical in an automotive industry
Leandro Vieira, Giles Balbinotti, Adriano Varasquin and Leila Gontijo, Federal University of Santa Catarina, Pontifical Catholic University of Paraná, Brazil

Room: 10

S-HEALTH 09 - Special Topics in Healthcare 2
Chair: RHM Goossens, Co-chair: Thaís Tosetto

The ‘urge to move’ on body supports
R H M Goossens, Delft University of Technology, The Netherlands

Kinematic analysis of post office employees’ workstations
Francesco Draicchio, Alessio Silvetti, Federico Forzano, Sergio Iavicoli and Alberto Ranavolo, Department of Occupational Medicine, Italy

Accessibility of sports facilities for persons with reduced mobility and assessment of their motivation for practice
Maria Manuel Sá, Rui Azevedo, Maria Cristina Martins, Osvaldo Machado and João Tavares, Instituto Superior da Maia, Portugal

Using walker during walking: a pilot study for health elder
Yeh Po-Chan and Leung Cherng-Yee, Tatung University, Taiwan

Effects of wearing a pressure redistribution belt while lying in a hospital bed
François Fraysse, Nathan Daniell and Gunther Paul, Ergolab, Mawson Institute, University of South Australia, Australia

Design of an ergonomic ultrasound system: accommodation of user anthropometrics
Sung Park, Jinho Yim and Goeun Lee, User Experience Design Group, Digital Media & Communications R&D Center, Samsung Electronics

Room: 05

S-HSVE 03 - Human Simulation and Virtual Environments 3

Elbow torque ellipses: investigation of the mutual influences of rotation, flexion, and extension torques
Fabian Guenzkofer, Heiner Bubb and Klaus Bengler, Technical University of Munich, Germany

Modeling human-bed interaction: the predictive value of anthropometric models in choosing the correct bed support
Vincent Verhaert, Hans Druyts, Dorien Van Deun, Tom De Wilde, Karel Van Brussel, Bart Haex and Jos Vander Sloten, Catholic University Leuven, R&D Custom8 NV, Belgium

Applications of agent-based simulation for human socio-cultural behavior modeling
Hong Jiang, Waldemar Karwowski and Tareq Z. Ahram, University of Central Florida, USA

DHM and serious games: a case-study oil and gas laboratories
V Santos, M Zamberlan, P Streit, J Oliveira, C Guimarães, F Pastura, and G Cid, Pontifical Catholic University of Rio de Janeiro, National Institute of Technology, Brazil

Skill training in multimodal virtual environments
Daniel Gopher, Faculty of Industrial Engineering and Management Technion, Israel

The added value of virtual reality technology and force feedback for surgical training simulators
L Zhang, C Grosdemouge, V S Arkatla, W Ahn, G Sankaranarayanan, S De, D Jones, S Schwartzberg and C G L Cao, Tufts University, Rensselaer Polytechnic Institute, Beth Israel Deaconess Medical Center, Cambridge Health Alliance Hospital, USA

Room: 11

S-MSDs 9 - Risk for MSD in different tasks and jobs - 2
Chair: Enrico Occhipinti
Evaluation of lumbar overload in hotel maids
J S Silva-Júnior, L R C Correa and L C Morrone, Santa Casa Medical Sciences School, Brazil

Participatory ergonomics among female cashiers from a department store
María Yanire León Cristancho, University of Concepción, Chile

Biomechanical strain of goldsmiths
Paula Emanuela Fernandes Cândido, Juliana Vieira Schmidt Teixeira, Antônio Renato Pereira Moro and Leila Amaral Gontijo, Federal University of Santa Catarina

Risk factors for repetitive strain injuries among school teachers in Thailand
Sunisa Chaiklieng and Pornnapa Suggaravetsiri, Khon Kaen University, Thailand

Job factors related to musculoskeletal symptoms among nursing personnel – a review
Marina Zambon Orpinelli Coluci and Neusa Maria Costa Alexandre, University of Campinas, Brazil

Room: 07

S-ODAM 06 - Work System Analysis and Design, Work Organization and Prevention of Musculoskeletal Disorders

Development of a knowledge management system for complex domains
André Perott, Nils Schader, Ralph Bruder and Jörg Leonhardt, University of Technology, DFS Deutsche Flugsicherung GmbH, Germany

Influence of work organization on worker’s health in a company of the wholesaler
M Marçal and F Silva, Center for Ergonomics Occupational Health and Safety, Brazil

Prevention of MSD within OHSMS/IMS: a systematic review of risk assessment strategies
Amin Yazdani and Richard Wells, University of Waterloo, Centre of Research Expertise for the Prevention of Musculoskeletal Disorders, Canada

Macroergonomic analysis of an assembly sector of a furniture company
A A Z Cristiane, M D Danielle and C B Vanessa, State University of Londrina, Brazil

Room: 12

S-Saf&Hth 09 - Human Factors and Ergonomics and Safety

Accidents related to the use of products and services in the city of São Luis, Brazil
Líssia Maria De Souza Dias, Raimundo Lopes Diniz and Lia Buarque de Macedo Guimarães, Santa Terezinha College, Federal University of Maranhão, Federal University of Rio Grande do Sul, Brazil

Tragedy on grade crossing: driver failure or systemic fragility?
Manoela Gomes Reis Lopes, Rodolfo Andrade de Gouveia Vilela, Ildeberto Muniz de Almeida, Odilamar Lopes Mioto, Mara Alice Batista Conti Takahashi and Fernanda Oliveira Perin, University of Sao Paulo, Paulista State University, Workers’ Health Program (PST-Americana), Reference Center for Workers’ Health (CEREST Piracicaba), Brazil

Human factors identification and classification related to accidents’ causality on hand injuries in the manufacturing industry
Rosa María Reyes-Martínez, Aide Maldonado-Macías and Lilia Roselia Prado-León, Juarez Institute of Technology, Autonomous University of Juárez City, University of City of Guadalajara, Mexico
Control centers design for ergonomics and safety
Leonardo Quintana, Cesar Lizarazo, Oscar Bernal, Jorge Cordoba, Claudia Arias, Magda Monroy, Carlos Cotrino and Olga Montoya, Javeriana University, Colombia

Methodological proposal for occupational health and safety actions in research laboratories with nanotechnologies activities
Luis Renato Balbão Andrade and Fernando Gonçalves Amaral, Fundacentro, Federal University of Rio Grande do Sul, Brazil

Posters
Time: 01:00pm – 06:00pm
Congress Hall
Area: Ergonomics in Design
The importance of ergonomics in the design conceptual process: Daciano da Costa – a case study on practicing and teaching
Ana Moreira da Silva, Technical University of Lisbon, Portugal

Area: Organizational Design and Management
Ergonomic and organizational analysis of an association of collectors of recyclable waste
R Maria, T Chagas and V Silva, Federal Institute of Education, Science and Technology of Minas Gerais, Federal University of Ouro Preto, University Center of Patos de Minas, Brazil

Consequences of organizational commitment in Abolished Company Sports Team - a case study in Japan
Yuki Honda, Yasuyuki Hochi and Motoki Mizuno, Juntendo University Graduate School of Health and Sports Science, Japan

A study on the relationship between commitment of club activity and vocational readiness among university students
Takashi Mizusawa, Yasuyuki Hochi and Motoki Mizuno, Juntendo University Graduate School of Health and Sports Science, Japan

Relationship between collective efficacy and contextual performance among university athletes in Japan
Yasuyuki Hochi, Motoki Mizuno, Takahiro Nakayama, Ikuyo Kannelo and Kaoru Kitamura, Juntendo University Graduate School of Health and Sports Science, Japan

A longitudinal study on the effects of team building for university baseball team in Japan: from the view point of team-vitalization
Yasuyuki Hochi, Motoki Mizuno, Takahiro Nakayama and Kaoru Kitamura, Juntendo University Graduate School of Health and Sports Science, Japan

Relationship between state anxiety and success rate in game performance, coach’s evaluation among Japanese university volleyball players
Kai Yamada, Yujiro Kawata, Nobuyuki Nakajima and Masataka Hirosawa, Juntendo University Graduate School of Health and Sports Science, Tokyo Future University, Japan

Construction of the integrated model for practical career support to the professional athletes
Motoki Mizuno, Yasuyuki Hachi, Mami Inoue, Ikuyo Kaneko and Yasuyuki Yamada, Juntendo University Graduate School of Health and Sports Science, Hitachi Brain Co., Ltd., Nagoya City University Graduate School of Medical Sciences, Japan

**Using balanced sorecard (BSC) approach to improve ergonomics programs**
Marcelo Vicente Forestieri Fernandes, Tersso Design, Brazil

**Proposal for an integrative methodology to development the ergonomic program**
Francisco Lopez-Millan, Enrique De la Vega, Karla Lucero Duarte and Martha Diaz Muro, Technological Institute of Cd. Juarez, Technological Institute of Hermosillo, Mexico

**Ports modernization and its influence on trade unions**
Regina Heloisa Maciel, Taise Araújo Lopes and Rosemary Cavalcante Gonçalves, University of Fortaleza, Brazil

**The relationship between perceived quality and divulgence strategies of products in the electronic marketplace**
João Costa and Milton Horn, Federal University of Santa Catarina, Brazil

**Cognitive and organizational ergonomics in the transition of the new integrated center of control of an oil refinery: human reliability and administration of changes**
Lucy M S Bau, Magda S E S Puquirre, Sandro A Buso, Érika L Ogasawara, Carolina R Marcon Passero and Marcos C Bianchi, Petrobras, Petróleo Brasileiro SA, Fisiotrab Ergonomia, Brazil

**Area: Psychophysiology in Ergonomics**

**Mind reading through the eyes: an fMRI study**
Yujiro Kawata, Eiji Kirino, Motoki Mizuno and Masataka Hirosawa, Tokyo Future University, Juntendo University Shizuoka Hospital, Juntendo University School of Health and Sports Science, Japan

**Daily rhythm of salivary IL-1β, cortisol and melatonin in day and night workers**
Érica Lui Reinhardt, Pedro Augusto Carlos Magno Fernandes, Regina Pekelmann Markus and Frida Marina Fischer, University of Sao Paulo, Fundacentro, Brazil

**Association between repetitive work and occupational cold exposure**
Márcia Rosângela Buzanello and Antônio Renato Pereira Moro, Federal University of Santa Catarina, State University of West of Parana, Brazil

**Physical health and work environment among farriers**
E Löfqvist and S Pinzke, Swedish University of Agricultural Sciences, Sweden

**An epidemiological profile of cashiers holders carpal tunnel syndrome in a grocery store chain**
R Costa, R Barros, D Campos, D Lima, Geórgia Barbosa, Salgado de Oliveira University, Brazil

**Area: Safety & Health**

**Economic incentives and the epidemiological indicators can contribute to the reduction of occupational hazards?**
Maria Luiza C Comper and Rosimeire S Padula, Metropolitan Union of Education and Culture, City of São Paulo University, Brazil

**Assessment of quality of sleep and sleepiness in workers with rotating shifts**
Rosimeire Simprini Padula and Graciela Junqueira de Abreu, City of São Paulo University, Brazil

**Development and validation of a safety climate scale for the trucking industry**
Ergonomic Initiatives at Inmetro: measuring occupational health and safety
L Drucker, M Amaral and C Carvalheira, National Institute of Metrology, Inmetro, Brazil

Quality of diet of working college students
Bartira Gorgulho, Dirce Maria Lobo Marchioni, Adriana Balian da Conceição, Josiane Steluti, Marina Hurga Mussi, Roberta Nagai-Manelli, Liliane Reis Teixeira, Andréa Aparecida da Luz and Frida Marina Fischer, University of Sao Paulo, Fiocruz, Brazil, Stockholm University, Sweden

Ergonomic risks on the operational activities of Firefighters from Rio de Janeiro
Flávia Curi Vitari, Hilmar Soares Francisco and Márcia Gomide da Silva Mello, Federal University of Rio de Janeiro, Fire Brigade of the State of Rio de Janeiro, Brazil

The ruler of inclusion in the process people learning with visual disability
Eliane Mafra, Eduardo Concepcion Batiz and Marcelo Macedo, Tupy Superior Institute, Brazil

Teachers’ sick leave due to mental and behavioral disorders and return to work
Amanda Aparecida Silva and Frida Marina Fischer, University of Sao Paulo, Brazil

Work of gravediggers and health
Fernando Pinheiro, Frida Marina Fischer and Claudio José Cobianchi, University of São Paulo, Cruzeiro do Sul University, Brazil

Cognitive representation of the comprehension test of safety warnings using multivariate methods
M M Cardoso-Junior and R A Scarpel, Technological Institute of Aeronautics, Brazil

Changes in human cervical and lumbar spine curves while bicycling with different handlebar heights
Yi-Lang Chen and Kuo-Chang He, Mingchi University of Technology, Taiwan

Identification of the mental workload of public employees in the administrative sector at a public university
Andressa Aline Sontag, José Mohamud Vilagra, Helenara Salvati Bertolossi Moreira, Antônio Renato Pereira Moro, Roberto Moraes Cruz, Pedro Ferreira Reis and Isabele Maia Galvão, State University of West of Paraná, Assis Gurgacz Faculty, Federal University of Santa Catarina

What is safety culture and risk-taking like at a large steel manufacturing company?
Hasse Nordlöf, University of Gävle, Sweden

Attention deficit/hyperactivity disorder’s effects on individuals’ scan paths during a simulated drive
J R Michaelis, D S McConnell and J A Smither, University of Central Florida, USA

Comparison of five approaches to keeping power line maintainers’ hands warm during work in the cold
S Hunt and R Wells, Toronto Hydro, University of Waterloo, Canada

A method to access safety and resilience in radiopharmaceuticals production process
Cláudio H S Grecco, Mario C R Vidal, Isaac J A L Santos and Paulo V R Carvalho, Institute of Nuclear Engineering, Federal University of Rio de Janeiro, Brazil

Screening stress factors survey in na institute of advanced studies: health and safety integrated plans
C S Fonseca, C N Gomes and F S Barros, Aeronautical Institute of Psychology, Brazil

Administrative rationality and coping strategies in shift work
Renato Rocha Lieber, Rodrigo Neiva Kvieska and Maurício Cesar Delamaro, Paulista State University, Brazil

Quantitative noise analysis at two marble finishing plants in Olinda, Pernambuco, Brazil
Rútilo P de Melo Neto, Emilia R Kohlman Rabbani, Béda Barkokébas Junior, Eliane M G Lago and Jonathas B de A Freitas, University of Pernambuco, Brazil

Application of preliminary risk analysis at marble finishing plants in Recife’s metropolitan area
Rútilo P de Melo Neto and Emilia R Kohlman Rabbani, University of Pernambuco, Brazil

Pulmonary function and exercise capacity in metal industry workers
Mônica V Gonçalves, Rosane F Bernardes, Luciana D Chiavegato and Rosimeire S Padula, City of São Paulo University, Brazil

Study of activities of postmen motorcyclists: a look at motorcycle accidents
Lícia Maria Barreto do Nascimento and Gracielle Aparecida Orlando Bortolotto, Social Service for Industry of Bahia, Social Service for Industry of Parana, Brazil

Area: Slips, Trips and Falls

Fatigue and postural instability in the railroad industry
Chip Wade, R Andres and J Garner, Auburn University, Ergonomic Engineering, Inc., University of Mississippi, USA

Use-related risk analysis for medical devices based on improved FMEA
Long Liu, Shuai Ma, ZhuWang and Ping Li, Tongji University, Shanghai East Hospital, China

Area: Transport

The profile of cyclists in the city of Juiz de Fora
Ugo Castañon, José A B Castañon and Marcio P S Santos, Federal University of Juiz de Fora, Federal University of Rio de Janeiro, Brazil

In-depth analysis of road crashes involving powered two-wheelers vehicles: typical human functional failures and conditions of their production
Pierre Van Elslande, Jean-Yves Fournier and Magali Jaffard, IFSTTAR-MA, France

Mobility and accessibility in historic cities
Ana Carla Carvalho, Rachel Filgueiras Paschoalin and José Alberto Castañon, Federal University of Juiz de Fora, Brazil

Distractions n’ driving: video game simulation educates young drivers on the dangers of texting while driving
Haneen Saqer, Ewart de Visser, Jonathan Strohl and Raja Parasuraman, George Mason University, USA

Determining skill transferability of action games as a method to reduce in-vehicle phone distractions
M Rupp, D S McConnell and J A Smither, University of Central Florida, USA

The impact of emotions and predominant emotion regulation technique on driving performance
G M Hancock, P A Hancock and C M Janelle, University of Central Florida, University of Florida, USA

The effects of iPod and text-messaging use on driver distraction: a bio-behavioral analysis
M Mouloua, A Ahern, A Quevedo, D Jaramillo, E Rinalducci, J Smither, P Alberti and C Brill, University of Technology of Compiègne, France, University of Central Florida, Old Dominion University, Optimal Electro Physiology, USA
Area: Visual Ergonomics

Use of color lights for the detection of anomalies in quality systems
G Báez, E De la Vega, C Castro and R Elizarraras, Autonomous University of Sinaloa, Technological Institute of Hermosillo, Indigenous Autonomous University of Mexico, Mexico

Keynote speeches

Time: 06:00pm – 07:00pm
Guararapes Auditorium

Unraveling the multivariate system of causal pathways for occupational-related low back disorders
William S Marras, The Ohio State University, USA

Beberibe Auditorium

Future of ergonomics
Jan Dul, Erasmus University, The Netherland

Brum Auditorium

Youth at work: challenges for a sustainable future
Frida Marina Fischer, University of Sao Paulo, Brazil

Ribeira Auditorium

Inculcating the ergonomic culture in developing countries: national healthy schoolbag Initiative in Sri Lanka
Kapila Jayaratne, Ministry of Health, Sri Lanka

Thursday, 16 February

Technical Committee Meetings

Time: 08:30am – 10:30am
Room 6 - Slips, Trips & Falls
Room 12 - Visual Ergonomics
Room 13 - Building and Construction

Symposiums

Time: 01:00pm – 02:30pm
Room: 01
**SS2 Last 30 years of the IEA**
Chair: Patrick Waterson

The recent history of the IEA: an analysis of IEA Congress presentations since 1961
Patrick Waterson, Pierre Falzon and Flore Barcellini, Loughborough University, UK, CNAM/Laboratory of Ergonomics, France

Emerging role of human factors and ergonomics in healthcare delivery – a new field of application and influence for the IEA
Pascale Carayon, University of Wisconsin-Madison, USA

Recurring issues in the IEA, the discipline and the profession of ergonomics/human factors
John R Wilson, University of Nottingham, UK

Linking of the IEA with other international bodies as part of the growth strategy for ergonomics at a global level
David C Caple, David Caple & Associates Pty Ltd, Australia

**Room: 02**

**SS4 New world of work and its effects on comfort, health and productivity**
Chair: Peter Vink, Delft University of Technology. Co-chairs: M. Blok and M. Robertson

New ways of working: does flexibility in time and location of work change work behavior and affect business outcomes?
Merle M Blok, Liesbeth Groenesteijn, Roos Schelvis and Peter Vink, TNO, The Netherlands, Delft University of Technology, The Netherlands

The effects of new ways of work in the Netherlands: national data and a case study
P Vink, M Blok, M Formanoy, E de Korte and L Groenesteijn, Delft University of Technology, TNO, The Netherlands

Examining new ways of office work between the Netherlands and the USA
M Robertson and P Vink, Liberty Mutual, TNO, The Netherlands

30 Years of ergonomics at 3M: a case study
N Larson and H Wick, 3M Corporation, USA

Expectation changes and team characteristics in a participatory design process
Conne Mara Bazley, Annelise De Jong and Peter Vink, JimConna Inc., USA, TU Delft, The Netherlands

Participatory ergonomics and new work: reducing neck complaints in assembling
S A Miguez, M S Hallbeck and P Vink, Ergosys Consulting, Brazil, University of Nebraska-Lincoln, USA, Delft University of Technology, The Netherlands

**Room: 03**

**SS6 Neuroergonomics, Technology and Cognition**
Chair: Raja Parasuraman

Symposium: Neuroergonomics, technology, and cognition
Raja Parasuraman, Caryl L Baldwin, Benjamin Knott, Joel S Warm, Victor Finomore, Deborah Boehm-Davis and Scott M Galster, George Mason University, Air Force Research Laboratory
Room: 04

S57 Ergonomics Analysis of Work and Training: Part 1 - Transmission and construction of knowledge in work situations
Chair: Céline Chatigny, Co-chair: Sylvie Ouellet

The influence of flexible management practices on the sharing of experiential knowledge in the workplace: a case study of food service helpers
Elise Ledoux, Esther Cloutier and Pierre-Sébastien Fournier, Institut de Recherche Robert-Sauvé en Santé et Sécurité du Travail, Laval University, Canada

Specialisation and training for fire-fighters driving heavy rescue vehicles: consequences for the development of operators?
Christine Vidal-Gomel, Catherine Delgoulet and Déborah Gébai, University of Nante, University Paris Descartes, ERGOnova, France

Coordination meetings as a means of fostering collective learning among jury members involved in the validation of prior learning (VPL)
Cortessis Sandrine, Swiss Federal Institute for Vocational Education and Training, Switzerland

Active participation in preventionist professional practices: a specific ergonomics training course
Léonard Querelle, Michel Duwelz, Joffrey Beaujouan and Anne Pignault, National Institute of Research and Safety, Polytechnic Institute of Bordeaux, University Paris West, France

Landscaping: teamwork and integration into inter-individual coordination as a learning situation
Patrick Mayen and Paul Olry, Agrosup Dijon, France

Room: 16

S59 Prospective ergonomics 1: approaches and principles
Chair: Jean-Marc Robert, Canada.

Prospective ergonomics: origin, goal, and prospects
Jean-Marc Robert and E Brangier, École Polytechnique de Montréal, Canada, Université Paul Verlaine, France

Innovation and design approaches within prospective ergonomics
A Liem and E Brangier, Norwegian University of Science and Technology, Norway, Université Paul Verlaine, France

Cognitive chrono-ethnography: a methodology for anticipating future user needs
M Kitajima, National Institute of Advanced Industrial Science and Technology, Japan

Ethical issues raised by the new orientations in ergonomics and living labs
J Barcenilla and Ch. Tijus, Université Paul Verlaine, France, Université Paris 8, France

Measuring a product’s usefulness
F Aubin, H Atoyan, J M Robert and T Atoyan, Cognitive Group Inc., École Polytechnique de Montréal, McGill University, Canada

Room: 17

S61 Agricultural Health and Safety and Ergonomics in Sweden
Health and safety strategy in Swedish agriculture
Peter Lundqvist and Catharina Alwall Svennefelt, Swedish University of Agricultural Sciences, Sweden

The farrier’s work environment
Lotta Löfqvist and Stefan Pinzke, Swedish University of Agricultural Sciences, Sweden

What factors attract and motivate dairy farm employees in their daily work?
Christina Lunner Kolstrup, Swedish University of Agricultural Sciences, Sweden

Ergonomics in animal production in Sweden - research, development and education
P Lundqvist, Swedish University of Agricultural Sciences, Sweden

Tractor accidents in Swedish traffic
Stefan Pinzke, Kerstin Nilsson and Peter Lundqvist, Swedish University of Agricultural Sciences, Lund University, Sweden

Occupational accidents among elderly farmers in Sweden
Kerstin Nilsson and Stefan Pinzke, Swedish University of Agricultural Sciences, Lund University, Sweden

Symposiums

Time: 02:30pm – 04:00pm
Room: 01

SS53 The new challenges of future vehicle HMI design, towards safer and positive experience
Chair: Fang Chen, Chalmers University of Technology, Sweden

Using naturalistic driving films as a design tool for investigating driver requirements in HMI design for ADAS
Minjuan Wang, Dong Sun and Fang Chen, Chalmers University of Technology, Sweden

Methodical aspects of text testing in a driving simulator
A Sundin, C J D Patten, M Bergmark, A Hedberg, I-M Iraeus and I Pettersson, Semcon AB, Swedish National Road and Transport Research Institute, Volvo Car Corporation, Sweden

The use of affective interaction design in car user interfaces
Dimitrios Gkouskos and Fang Chen, Chalmers University of Technology, Sweden

Countermeasure drowsiness by design - using common behaviour
Staffan Davidsson, Luleå University of Technology, Volvo Cars Corporation, Sweden

Towards a model to interpret driver behaviour in terms of mismatch between real world complexity and invested effort
Robert Broström and Staffan Davidsson, Volvo Car Corporation, Luleå University of Technology, Sweden

Room: 02

SS55 Design and Evaluation of Work Systems for Aging Employees
**Influences of mechanical exposure biographies on physical capabilities of workers from automotive industry – a study on possible dose-response relationships and consequences for short and long term job rotation**
Holger Rademacher, Ralph Bruder, Andrea Sinn-Behrendt and Kurt Landau, Technical University of Darmstadt, Germany

**Impact of increasing productivity on work content and psychosocial work characteristics in Chaku-Chaku assembly lines - a follow-up study in a German automotive manufacturing company**
José Alonso Enríquez-Díaz, Daniel Kotzab, Alina Sytch and Ekkehart Frielning, University of Kassel, Germany

**Consolidated findings from 6 years research on the age-differentiated design of human-computer interaction**
Sebastian Vetter, Jennifer Bützler, Nicole Jochems and Christopher M Schlick, Aachen University, Germany

**Promoting work ability and well-being in hospital nursing: the interplay of age, job control, and successful ageing strategies**
Andreas Müller, Matthias Weigl, Barbara Heiden, Jürgen Glaser and Peter Angerer, University Munich, Germany

**What makes age diverse teams effective? Results from a six-year research program**
J Wegge, F Jungmann, S Liebermann, M Shemla, B C Ries, S Diestel and K H Schmidt, Technical University Dresden, Leibniz Research Centre for Working Environment and Human Factors, Technical University Dortmund, Germany

**Aging: physical difficulties and safety in cooking tasks**
N I Ibrahim and S Davies, University of Malaysia Perlis, Malaysia, Coventry University, UK

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**Room: 04**

**SS8 Ergonomics Analysis of Work and Training: Part 2 - Analysis of trainers’ and teachers’ activities and their pedagogical views (or the consequences thereof)**
Chair: Marie Laberge, Co-chair: Céline Chatigny

**Being a trainer in the French vocational training system: a case study of job status and working conditions in relation to perceived health**
Catherine Delgoulet, University Paris Descartes, Center of Study of Employment, France

**Conditions, demands and constraints on trainers' activity: a case study in the Portuguese context**
Marta Santos and Andreia Ferreira, University of Porto, Portugal

"Obey", "disobey" or "tinker with" reforms to the system: a subject for French teacher trade unions to work on
Dominique Cau-Bareille, Lyon Institute of Study of Work, University of Lyon 2, France

**Physical education and sport teachers’ health : from expressed ill-being to hindrances of action**
Fabien Coutarel and Jacques Fiard, University of Clermont, University Blaise Pascal, France

**What is learned during the first moments of work?**
Claire Tourmen, Annie Leroux and Sylvie Beney, AgroSup Dijon, CARSAT de Bourgogne, France

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**Room: 16**
S60 Prospective ergonomics 1: methods and cases studies
Chair: Eric Brangier, France.

Anticipating needs and designing new items rapidly - a case study for the design of postural aid equipment
M C Prévost and D Spooner, Designfabrik, Canada

Drivers’ safety needs, behavioural adaptations and acceptance of new driving support systems.
F Saad and P Van Elslande, IFSTTAR, France

Activity analysis: contributions to the innovation of projects for aircrafts cabins
N T Rossi, F M Greghi, N L Menegon and G B J Souza, Federal University of Sao Carlos, Brazil

Designing future products: what difficulties do designers encounter and how can their creative process be supported?
Nathalie Bonnardel, Aix-Marseille University, University Institute of France, France

Room: 17

S62 Musculoskeletal Disorders in Agriculture
Chair: Roberto Abrahão, Campinas State University, Brazil, Co-chair: Christina Lunner Kolstrup, Swedish University of Agricultural Sciences, Sweden

Social partners cooperation for reduction of musculoskeletal disorders in agriculture
Veerlie Hermans, David O’Neill, Roeland Motmans, Peter Lundqvist and Danuta Roman-Liu, Department of Ergonomics, IDEWE, External Prevention Service for Safety and Health at Work, Vrije Universiteit Brussel, Belgium, Loughborough University, UK, Swedish University Agricultural Sciences, Sweden, Biomechanics Laboratory, CIOP, Poland

Relationship between productivity, quality and musculoskeletal disorder risk among deboning workers in a Chilean salmon industry
Juan S Ilardi, Institute of Work Safety, Chile

Ergonomics and design in the Brazilian agricultural sector: a proposal to build matrix of contradictions
Thaís Tosseto and João Alberto Camarotto, Federal University of São Carlos, Brazil

Ergonomic analysis in the bagging of grain equipment: unsuitability of the workstation
Suzi Mariño and L Lemos, Bahia State University, Federal University of Bahía, National Service for Industrial Training, Brazil

Workload composition of the organic horticulture
R F Abrahão, I A V Ribeiro and M J A Tereso, Faculty of Agriculture Engineering, Campinas State University, Brazil

Parallel Sessions

Time: 01:00pm – 02:30pm

Room: 06

S-EAWT 13 – Ergonomics at Health and Public Activity

Working conditions and health hazards in a medical emergency call center: TARM’s case
T Palma, Federal University of Bahia, Brazil
The inefficiency of the telephone assistance software used in a medical emergency service
T Palma, Federal University of Bahia, Brazil

Assessment of work ability of health professionals in the mobile emergency unit
Y Santos, F Porto, L Marques, A Tomaz, R Toledo and N Lucena, University Center of João Pessoa, Federal University of Paraíba, Brazil

Taking care of you and care for others: an analysis of the activity of the work of technical and nursing assistants of a psychiatric institution for children and adolescents
Davidson Passos Mendes, Geraldo Fabiano de Souza Moraes and Juliana Cristina de Lima Mendes, University Federal of Itajubá, Evangelical Hospital, Brazil

Designing the safety of healthcare. Participation of ergonomics to the design of cooperative systems in radiotherapy
Maria Isabel Munoz, Nadia Bouldi, Flore Barcellini and Adelaide Nascimento, National Conservatory of Arts and Crafts, France

Evaluation of mental workload on public employees in the administrative sector
I Galvão, P Reis, A Moro, J Vilagra, H Moreira, A Sontag and R Cruz, Oeste do Parana State University, Federal University of Santa Catarina, Brazil

Room: 08

S-EinD 19 – Ergonomics and Information Design

Urban Ergonomics: an ongoing study of city signs and maps
Patricia Alves and Pedro Arezes, University of Minho, Portugal

Ergonomics and design: traffic sign and street name sign
Janaina Luisa da Silva Moroni and José Luís Farinatti Aymone, Federal University of Rio Grande do Sul, Brazil

A brief essay on ergonomics in graphic design
André Noronha Furtado de Mendonça, Júlio Carlos de Souza van der Linden and Tania Mara Galli Fonseca, Federal University of Rio GRamde do Sul, Brazil

Informational ergonomics and design: signage design for Monte Sião Camp
Luiz Guilherme Oliveira Marques and Vânia Maria Batalha Cardoso, Federal University of Amazon, Brazil

Analyzing web pages visual scanpaths: between and within tasks variability
Gautier Drusch and J. M. Christian Bastien, University Paul Verlaine, France

Web accessibility: evaluation of a website with different semi-automatic evaluation tools
Edson Rufino de Souza and Cláudia Mont’Alvão, Pontifical Catholic University of Rio de Janeiro, National Institute of Industrial Property, Brazil

Room: 10

S-HEALTH 10 - Special Topics in Healthcare 3

Weight gain in relation to night work among nurses
Elaine C Marqueze, Lucia C Lemos, Nilson Soares, Geraldo Lorenzi-Filho and Claudia R C Moreno, University of Sao Paulo, Instituto do Coração, University of Sao Paulo, Brazil
Relationship between exposure to cement and the incidence of respiratory diseases in children: a preventive perspective
A Borba, A Santos, Y Santos and F Porto, University Center of João Pessoa, Federal University of Paraíba, Brazil

Quick exposure check (qec): a cross-cultural adaptation into Brazilian-Portuguese
Maria Luiza C Comper, Leonardo O P Costa and Rosimeire S Padula, Metropolitan Union of Education and Culture, City of São Paulo University, Brazil, The George Institute for Global Health, Australia

Moral harassment at work model and inability
Izabel Carolina Martins Campos, Lizandra da Silva, Rafaela Luiza Trevisan and Roberto Moraes Cruz, Federal University of Santa Catarina, State Secretary of Administration's Office, Brazil

Development of force-endurance models for simulated dental task
V Gnaneswaren and R R Bishu, University of Nebraska, USA

Comparison of index of ability to work (ict) among workers of day and night fixed work shift
Luciana Duarte Satler de Oliveira and Sarina Occhipinti Magalhães, FUMEC University, Federal University of Minas Gerais, Brazil

Room: 11

S-MSDs 10 - Studies on muscle activities
Chair: Nils Fallentin

Study on lumber kinematics and the risk of low back disorder in female university students by using shoes of different heel heights
Rauf Iqbal, Amitabha De, Wricha Mishra, Shreya Maulik and Chandra AM, National Institute of Industrial Engineering, University of Calcutta, India

Motor variability – an important issue in occupational life
Divya Srinivasan and Svend Erik Mathiassen, University of Gavle, Sweden

Long periods with uninterrupted muscle activity related to neck and shoulder pain
Therese N Hanvold, Morten Wærsted and Kaj Bo Veiersted, National Institute of Occupational Health, Norway

Specificity of back muscle response to submaximal fatiguing contractions
Nils Fallentin, Rammohan Maikala, Jacob Banks, Niall Obrien and Amanda Rivard, Liberty Mutual Research Institute for Safety, USA

Stationarity test of electromyographic signals during isokinetic trunk exertions
Young-Jin Cho and Jung-Yong Kim, Hanyang university, Korea

Muscular activity in different locomotion plans with the use of various shoes types and barefoot
Geraldo Fabiano de Souza Moraes, Davidson Passos Mendes and Adriana Antunes Papinni, University Federal of Itajubá, Brazil

Room: 12

S-MSDs 12 - Miscellanea of techniques for analysis and applications useful for WMSDs prevention
Chair: Marco Placci

Can digital signals from the keyboard capture force exposures during typing?
Comparison between hand surface markers and joint center-based markers
M Jung, S Mo, K Lee and J Kwag, Ajou University, Republic of Korea

Notebook computer use with different monitor tilt angle: effects on posture, muscle activity and discomfort of neck pain users
Wen-Ko Chiou, Wei-Ying Chou and Bi-Hui Chen, Chang Gung University, Chihlee Institute of Technology, Taiwan

Developing the ergonomics of a field data recorder
M Nyberg, M Savinainen and J Sillanpaa, Finnish Institute of Occupational Health, Finland

Usability analysis of 2D graphics software for designing technical clothing
Rita de Cassia Clark Teodoroski, Edilene Zilma Espíndola, Enéias Silva, Antônio Renato Pereira Moro and Vera Lucia D. V. Pereira, Estácio de Sá Faculty of Santa Catarina, Federal University of Santa Catarina, Brazil

A computerized system to monitor resilience indicators in organizations
Paulo Victor Rodrigues de Carvalho, Alan Pinheiro de Souza and Jose Orlando Gomes, Nuclear Engineering Institute, Brazil \(^2\)Graduate Program in Informatics-NCE&IM, Brazil

A program to support the construction and evaluation of resilience indicators
Gilbert Jacob Huber, Jose Orlando Gomes and Paulo Victor Rodrigues de Carvalho, Nuclear Engineering Institute, Graduate Program in Informatics-NCE&IM, Brazil

Organizational ergonomics of occupational health methods and processes in a Brazilian oil refinery
Lucy M S Bau, Jean P Farias, Sandro A Buso and Carolina R Marcon Passero, Petróleo Brasileiro S.A., Fisiotrab Ergonomia, Saúde e Segurança no Trabalho Ltda., Qualimaster Consultoria Empresarial Ltda., Brazil

Ergonomics program management in Tucurui Hydropower Plant using TPM methodology
R M Santos, A C Sassi, B M Sá, S A Miguez and A A Pardaul, Eletrobras Eletronorte, Brazil

Participatory ergonomics for psychological factors evaluation in work system design
L Wang, The University of Hong Kong, Hong Kong

Effect of ergonomic and workstyle risk factors on work related musculoskeletal disorders among IT professionals in India
Deepak Sharan and PS Ajeesh, RECOUP Neuromusculoskeletal Rehabilitation Centre, India

The effect of ambient light on maximal voluntary force production in a multi-digit pressing task
S Karol, University of Maryland, USA

Slaughterhouse workers exposed to cold: proposal of reference thermography values for hands
Márcia Rosângela Buzanello and Antônio Renato Pereira Moro, Federal University of Santa Catarina, State University of West of Paraná, Brazil
Psychological determinants of information searching activity
L Gorunova, Saint-Petersburg State University, Russia

Minor psychiatric disorders among nursing workers – is there an association with current or former night work?
Thiago Bernardes Diniz, Aline Silva-Costa, Rosane Harter Griep and Lúcia Rotenberg, Oswaldo Cruz Foundation, Brazil

Room: 14

S-Saf&Hth 10 - Workplace Safety

Perceptual load in central and peripheral regions and its effects on driving performance: advertizing billboards
Hadas Marciano and Yaffa Yeshurun, University of Haifa, Israel.

Effects of pushing height on trunk posture and trunk muscle activity when a cart suddenly starts or stops moving
Yun-Ju Lee, Marco J M Hoozemans and Jaap H van Dieën, VU University Amsterdam, The Netherlands

Cognitive structure of occupational risks represented by a perceptual map
M M Cardoso-Junior and R A Scarpel, Technological Institute of Aeronautics, Brazil

Safety illusion and error trap in a collectively-operated machine accident
Ildeberto Muniz de Almeida, Hildeberto Nobre Jr, Maria Dionísia do Amaral Dias and Rodolfo Andrade Gouveia Villela, Paulista State University, Ministério do Trabalho e Emprego, University of São Paulo, Brazil.

Human error assessment in electric power company of Serbia
Evica Stojiljkovic, Miroljub Grozdanovic and Predrag Stojiljkovic, University of Nis, Economic Association for Electric Energy distribution “Jugoistok” d.o.o Nis, Serbia

Understanding safety culture by visualization of scenarios – development and evaluation of an interactive prototype
Mikael Blomé and Åsa Ek, Lund University, Sweden

Room: 15

S-Saf&Hth 12 - Potpourri of Ergonomic Issues 1

Neck muscle myoelectrical activity measured by electromyography while wearing safety helmets on three different head positions
G de la Teja and G Mejia, Autonomous University of Ciudad Juárez, Mexico

Human reliability and ergonomics: a literature review from 1963 to 2011
João Alexandre Pinheiro Silva, Nilton Luis Menegon and Marly Monteiro de Carvalho, Escola Superior of Engineering and Management, Federal University of São Carlos, University of São Paulo, Brazil

An auditive protection for professional musicians
Paula Emanuela Fernandes Cândido, Eugenio Andrés Díaz Merino and Leila Amaral Gontijo, Federal University of Santa Catarina, Brazil

Study on the impact of exposure to noise in professional snipers
B Barkokebas Junior, E Lago, B Vasconcelos and E Oliveira, University of Pernambuco, Brazil
An exploratory study on the conditions of health, safety and environmental affairs of very small and small-size enterprises in Brazil
Carlos André Vaz Junior, Roberto de Araujo Mendonça and Cláudia do Rosário Vaz Morgado, Federal University of Rio de Janeiro, Brazil.

Contributions of participatory ergonomics to the improvement of safety culture in an industrial context
Carine Lallemand, Public Research Centre Henri Tudor, Luxembourg

Room: 13

S-STF 01 - Slips and Falls
Chair: Wen-Ruey Chang

Assessment of slip resistance under footwear materials, tread designs, floor contamination, and floor inclination conditions
Kai Way Li, Chih-Yong Chen, Ching Chung Chen and Liwen Liu, Chung Hua University, Institute of Occupational Safety and Health, Hsing Wu College, Taiwan

Thousands of slip injuries can be prevented... we need step change in floor safety
A Stewart, SlipAlert LLP – United Kingdom

Forensic human factors analysis of slip and fall incidents
T Fischer and J Fischer, Fischer Forensic Services, USA

Fundamental study on relationship between human injury probability due to fall and the fall height
Yasumichi Hino, National Institute of Occupational Safety and Health Japan, Japan

Measuring step geometry using the nose-to-nose method: validity and repeatability
Daniel Johnson and Gary Sloan, Daniel A. Johnson, Inc., Gary Sloan Forensic Human Factors, USA

Room: 07

S-VisErgo 01 - General aspects

Applying research to practice: generalist and specialist (visual ergonomics) consultancy
Jennifer Long and Airdrie Long, Jennifer Long Visual Ergonomics, University of New South Wales Sydney, Considered Solutions, Australia

Temporal aspects of increases in eye-neck activation levels during visually deficient near work
Hans O Richter, Lodin Camilla and Mikael Forsman, University of Gävle, Karolinska Institute, Sweden

Lighting old age – how lighting impacts the ability to grow old in own housing, part one
Gunnar Horgen, Grethe Eilertsen and Helle Falkenberg, Buskerud University College, Norway

Eye- and neck/shoulder-discomfort during visually demanding experimental near work
Camilla Lodin, Mikael Forsman and Hans Richter, University of Gävle, Karolinska Institute, Sweden

Co-variation in time between near-far accommodation of the lens and trapezius muscle activity
Mikael Forsman, Camilla Lodin and Hans Richter, Karolinska Institute, University of Gävle, Sweden

Graphic and cultural aspects of pictograms: an information ergonomics viewpoint
Carla Galvão Spinillo, Federal University of Paraná, Brazil
Parallel Sessions

Time: 02:30pm – 04:00pm

Room: 09

S-PsyErg 02 - Psychophysiology in Ergonomics 02

Concurrent cognitive task may improve motor work performance and reduce muscle fatigue
Maria Evstigneeva, Aleksandr Aleksandrov, Svend Erik Mathiassen and Eugene Lyskov, Saint Petersburg State University, Russia, Gävle University, Sweden

Effects of physical and mental demands on shoulder muscle fatigue
Ranjana K Mehta and Michael J Agnew, Michigan Technological University, Virginia Tech, USA

Comparison of the perception of exertion, fatigue, pain and organizational overload in workers from two industrial sectors with different methods of work organization
V Oliani, Federal University of Sao Carlos, Brazil

False alarms and incorrect rejections in an information security center: correlation with the frequency of incidents
Thiers Bruno and Julia Abrahão, University of Brasilia, University of São Paulo, Brazil

Occupational stress, working condition and nutritional status of military police officers
Ângela Maria C Santana, Josiane Keila V Gomes, Dione De Marchi, Yassana M Girondoli, Lina E F P de Lima Rosado, Gilberto Paixão Rosado and Isabel Maria de Andrade, Federal University of Viçosa, Brazil

Room: 14

S-Saf&Hth 11 - Safety

Efficient and effective learning for safety from incidents
Roland Akselsson, Anders Jacobsson, Marcus Börjesson, Åsa Ek and Ann Enander, Lund University, Swedish National Defence College Karlstad, Sweden

Planning crowd events to achieve high participant satisfaction
Victoria L Kendrick, Roger A Haslam and Patrick E Waterson, Loughborough University, UK

Recovery and detachment between shifts, and fatigue during a twelve-hour shift
Christian Korunka, Bettina Kubicek, Roman Prem and Antonio Cvitan, University of Vienna, Austria

How to increase safety in complex systems – an ongoing project
Håkan Alm, Anita Gärling, Sara Saeliström Bonnevier and Mats Danielsson, Luleå University of Technology, Sweden.

Different roles in the quest for system resilience
Fábio Morais Borges and Nilton Luiz Menegon, University of Paraíba, University of São Carlos, Brazil

Circuit board accident – organizational dimension hidden by prescribed safety
Ildeberto Muniz de Almeida, Eduardo Buoso, Maria Dionísia do Amaral Dias amd Rodolfo Andrade Gouveia Vilela, Paulista State University, Department of Public Health, University of São Paulo, Cerest Piracicaba, Brazil

Room: 15
S-Saf&Hth 13 - Potpourri of Ergonomic Issues 2

Mapping of noise impact provoked by the execution of foundation piles at high rise building sites
Adolpho Guido de Araújo, Alexandre Duarte Gusmão, Emilia Rahnemay Kohman Rabbani and Stela Paulino Fucale, University of Pernambuco, Brazil

Ergonomic work analysis as a tool of prevention for the occupational safety and health management system
Verônica de Miranda Prottes, Nádia Cristina Oliveira and Alessandra Barbosa de Oliveira Andrade, Pitágoras College, Bioergo Ergonomics Consulting Company, Brazil

Cognition and asynchronous distribution between human and machine building accidents
Edgard Martins, Marcelo Soares, Lia Augusto and Laura Martins, Federal University of Pernambuco, FIOCRUZ, Aggeu Magalhães Research Center, Brazil

Parachuting harnesses comparative evaluation on energy distribution grids
Paula Karina Hembecker, Ângela Regina Poletto and Leila Amaral Gontijo, Federal University of Santa Catarina, Federal Institute of Santa Catarina, Brazil

How to evaluate the risks of work equipment and installations for health and safety? Research and activities of the German Committee for Plant Safety and consequences for regulation
R Pieper, Institute of Occupational Health, Safety and Ergonomics, German Committee for Plant Safety, Germany

Room: 13

S-STF 02 - Slips, Trips & Falls: Footwear and Walking Surfaces
Chair: Daniel Johnson

Effect of walking surface perturbation training on slip propensity and local dynamic stability
Jian Liu and Sukwon Kim, University of Houston, USA, Chonbuk Normal University, South Korea

The development of a universal approach to testing of walkway slip resistance in the U.S.
James Flynn, Steven Di Pilla and Keith Vidal, J2 Engineering, ESIS Health, Safety & Environmental, Vidal Engineering St Louis, USA

Stair safety: bottom of flight illusion
Daniel Johnson, Daniel A. Johnson, Inc., USA

The stochastic distribution of available coefficient of friction on quarry tiles for human locomotion
Wen-Ruey Chang, Simon Matz and Chien-Chi Chang, Liberty Mutual Research Institute for Safety, USA

Review of walking hazards for railroad workers
Robert O Andres and Chip Wade, Ergonomic Engineering, Inc., Auburn University, USA

Room: 07

S-VisErgo 02 - Task specific aspects
Chair: Hans Richter

A study of subjective visual disturbances in jewellery manufacturing
Amitabha De, Dhar U, Virkar T, Altekar C, Mishra W, Parmar V, M Mutakekar, Rauf Iqbal and A M Chandra, National Institute of Industrial Engineering, University of Calcutta, India
Application of digital human modeling and simulation for vision analysis of pilots in a jet aircraft: a case study
Sougata Karmakar, Madhu Sudan Pal, Deepti Majumdar and Dhurjati Majumdar, Indian Institute of Technology (IIT) Guwahati, Min. of Defence, India

Operative strategies of HLB’s scouts of a citrus property within the State of Sao Paulo, Brazil
Glaucia Helena Gonçalves and Nilton Luiz Menegon, Federal University of São Carlos, Brazil

Ergonomic analysis of safety signs: a focus of informational and cultural ergonomics
Janaina Cavalcanti and Marcelo Soares, Federal University of Pernambuco, Brazil

Visual ergonomics interventions in mail sorting facilities
H. Hemphälä, G-Å. Hansson, C. Dahlqvist and J Eklund, Lund University, University Hospital, Royal Institute of Technology, Sweden

Point navigation map method to track low-income mobile user’s interaction
Leonardo Abreu and Anamaria de Moraes, Pontifical Catholic University of Rio de Janeiro, Brazil

Room: 05

S-PC 02 - Process Control 02

The alarm system and a possible way forward
Håkan Alm and Anna-Lisa Osvalder, Luleå University of Technology, Chalmers University of Technology, Sweden

HMI conventions for process control graphics
Ruurd N Pikaar, ErgoS Engineering & Ergonomics, The Netherlands

Transfer of control system interface solutions from other domains to the thermal power industry
L-O Bligård, J Andersson and A-L Osvalder, Chalmers University of Technology, Sweden

Analysis of mental workload of electrical power plant operators of control and operation centers
Daiana Martins Vitório, Francisco Soares Masculo and Miguel O B C Melo, Federal University of Paraíba, Brazil

Room: 12

S-ODAM 07 - Macroergonomics Tools, Corporate Strategies and Organizational Effectiveness

Linking human factors to corporate strategy with cognitive mapping techniques
Judy Village, Michael Greig, Filippo A Salustri and W Patrick Neumann, Ryerson University, Canada

Economics of human performance and systems total ownership cost
Wilawan Onkham, Waldemar Karwowski and Tareq Z. Ahram, University of Central Florida, USA

Job stress management protocol using a merge between cognitive-behavioral techniques and ergonomic tools
Elaine Viola and Mario Cesar Vidal, Ergo&Plus Consulting Services, Federal University of Rio de Janeiro, Brazil

Room: 11

S-MSDs 11 - Clinical aspects of WMSDs and further contribution to analysis of posture and WMSDs
Chair: Edoardo Santino

Preventing rsi/wruld: use of esthesiometry to assess hand tactile sensitivity of slaughterhouse workers
P Reis and A Moro, Federal University of Santa Catarina, Intitute of Ensino Superior of Foz do Iguaçu, Brazil

Comparative analysis of assessment of the craniocervical equilibrium through two methods: cephalometry of rocabado and cervical range of motion
Lilian Beccerra de Oliveira, Franklin Cajaíba, Wesley Costa, Mariano Rocabado, Rodrigo Lazo-Osório and Sanzía Ribeiro, Adventist Faculties of Bahia, University Vale do Paraíba, Brazil, University Andres Bello, Chile

Analysis of temperature on the surface of the wrist due to repetitive movements using sensory thermography
C Camargo, J Ordorica, E J De la Vega, J E Olguín, O R López and J A López, Autonomous University of Baja California, Hermosillo’s Institute of Technology, Mexico

Functional analysis of scapular position in assymptomatic professors
Geraldo Fabiano de Souza Moraes and Davidson Passos Mendes, University Federal of Itajubá, Brazil

Assessment of pain and upper limbs position of dentistry students
G Moraes and D Mendes, Universidade Federal University of Itajuba, Brazil

Shoes influence in women posture
Geraldo Fabiano de Souza Moraes, Davidson Passos Mendes and Adriana Antunes Papinni, Federal University of Itajubá, Brazil

Room: 10

S-HEALTH 11 - Special Topics in Healthcare 4

Hand Therapy and Ergonomics: Integration of Approaches in Vocational Rehabilitation and Promotion of Decent Work in Brazil
Thaís Tosetto and Flávia Giuntini Orsi, Federal University of São Carlos, Padre Anchieta University Center, Brazil

Design and Ergonomics of package inserts of drugs in Brazil: a reality in construction
Charles Ricardo Leite da Silva and Marcelo Marcio Soares, São Paulo State University, Federal University of Pernambuco, Brazil

How user diversity and country of origin impact the readiness to adopt e-health technologies: an intercultural comparison
Wiktoria Wilkowska, Martina Ziefle and Firat Alagöz, RWTH University Aachen, Germany

Using walker during walking: a pilot study for health elder
Yeh Po-Chan and Leung Cherng-Yee, Tatung University, Taiwan

An office chair to influence the sitting behavior of office workers
R H M Goossens, M P Netten and B Van der Doelen, Delft University of Technology, Erasmus MC, The Netherlands

Life-style factors predicting the changes in aerobic capacity of ageing firefighters at three- and thirteen-year follow-ups
A Punakallio, S Lusa, R Luukkonen and H Lindholm, Finnish Institute of Occupational Health, Finland

A noise pollution survey in an Iranian tobacco products company
S-EAWT 14 – Methods for Ergonomic at Work

Conceptual design pattern for ergonomic workplaces
Fonseca, Bernardo Bastos Fonseca, Maria Victoria Cabrera Aguilera and Mario Cesar Rodríguez Vidal, Federal University of Rio de Janeiro, Brazil

Participatory ergonomics and design of technical assistance
Claudia Isabel Rojas Rodríguez, Pedagogical and Technological University of Colombia, Colombia

Effects of early support intervention on workplace ergonomics – a two-year follow-up study
Johanna Turja, Simo Kaleva, Markketa Kivistö and Jorma Seitsamo, Finnish Institute of Occupational Health, Finland

A multi-ontology view of ergonomics: applying the cynefin framework to improve theory and practice
Wendy Elford, Now to Next Pty Ltd, Australia

How do people differentiate between jobs: and how do they define a good job?
Wendy Jones, Roger Haslam and Cheryl Haslam, Loughborough University, UK

Assessing suitability of similarity coefficients in measuring human mental models
S Liang and L Tzeng, National Taipei University of Technology, Taiwan

Room: 08

S-EinM 07 - Ergonomics in Manufacturing 7
Chair: André S. Salles, Loughborough University, UK, Co-chair: Yanes Escalona, L, University of Carabobo, Venezuela

Modified track shoes and their effect on the EMG activity of calf muscles
Marlon Greensword, Fereydoun Aghazadeh and Saif Al-Qaisi, Louisiana State University, USA

The specification of personalised insoles using additive manufacturing
André S Salles and Diane E Gyi, Loughborough University, UK

The reality of the women who make our lives easier: experience in a company that assembles electric motors in Venezuela
L Yanes Escalona, R Sandia Venot, E Escalona and L Yanes, University of Carabobo, Autonomous Service Institute of Higher Studies "Dr. Arnoldo Gabaldon", Ministry of Popular Power for Health, Venezuela

State of scientific knowledge about the need of recovery time at specific workplaces and recomendations for further research
C Mühlmeleyer, A Klussmann, H Gebhardt and K H Lang, Institute of Occupational Health, Safety and Ergonomics, Germany

Software development for the evaluation of the ergonomic compatibility on the selection of advanced manufacturing technology
A Maldonado-Macías, R Reyes, L Guillen and J García, Ciudad Juárez Autonomous University, Mexico
Construction of a survey to assess workload and fatigue among AMT operators in Mexico
Juan Luis Hernández Arellano, Gabriel Ibarra Mejía, J Nieves Serratos Pérez, Jorge Luis García Alcaraz and María Julia Brunette, Autonomous University of Ciudad Juárez, University of Guanajuato, University of Massachusetts Lowell, USA

Closing ceremony

Time: 04:30pm – 06:00pm

Guararapes Auditorium