

## Poster Session #1 – Monday June 22 & Tuesday June 23

- P.1 Vestibular control of posture when voluntarily standing still**  
Raymond Reynolds<sup>1</sup>, <sup>1</sup>University of Birmingham, Birmingham, United Kingdom
- P.2 Change in the transmission within several spinal pathways in cerebral palsy patients**  
Valerie Achache<sup>1,3</sup>, Nicolas Roche<sup>1,5</sup>, Alexandra Lackmy<sup>1,2</sup>, Antoine Gastal<sup>5</sup>, Veronique Quentin<sup>5</sup>, Rose Katz<sup>1,4</sup>, <sup>1</sup>UMR\_S731 UPMC, PARIS, France, <sup>2</sup>UMR\_S731 INSERM, PARIS, France, <sup>3</sup>Hopital National, SAINT MAURICE, France, <sup>4</sup>Pitie Salpetriere Hospital, PARIS, France, <sup>5</sup>Raymond Poincaré Hospital, GARCHES, France
- P.3 People Tend to Sense their Foot Position tends to be Sensed as more Medial than the Actual Foot Position**  
Yoshiyuki Kobayashi<sup>1</sup>, Kimitaka Nakazawa<sup>1</sup>, Masami Akai<sup>1</sup>, Hiroshi Fujimoto<sup>2</sup>, <sup>1</sup>National Rehabilitation Center for Persons with Disabilities, Tokorozawa, Saitama, Japan, <sup>2</sup>Waseda University, Tokorozawa, Saitama, Japan
- P.4 Importance of binocular vision in controlling foot-reach and placement parameters during a locomotion task**  
Graham Chapman<sup>1</sup>, John Buckley<sup>2</sup>, <sup>1</sup>Vision and Mobility Research Laboratory, Bradford School of Optometry and Vision Science, University of Bradford, Bradford, United Kingdom, <sup>2</sup>Vision and Mobility Research Laboratory, School of Engineering, Design, and Technology, University of Bradford, Bradford, United Kingdom
- P.5 Can peripheral vision guide perturbation-evoked reach-to-grasp balance-recovery reactions?**  
Emily King<sup>1,2</sup>, Sandra McKay<sup>1,2</sup>, Kenneth Cheng<sup>1,2</sup>, Brian Maki<sup>1,2</sup>, <sup>1</sup>Sunnybrook Health Sciences Centre, Toronto, ON, Canada, <sup>2</sup>University of Toronto, Toronto, ON, Canada
- P.6 A visual illusion leads to safer stepping behaviour: Action follows perception**  
John Buckley<sup>1</sup>, Anna Vale<sup>1</sup>, David Whitaker<sup>1</sup>, David Elliott<sup>1</sup>, <sup>1</sup>Vision & Mobility Lab, University of Bradford, Bradford, West Yorkshire, United Kingdom
- P.7 A quantitative analysis of neuronal interactions between eye position and optic flow representation in superior parietal cortex of macaque monkey**  
Chiara Carrozzini<sup>1,2</sup>, Milena Raffi<sup>2</sup>, Salvatore Squatrito<sup>2</sup>, Angelo Cappello<sup>1</sup>, <sup>1</sup>DEIS - Università di Bologna, Bologna, BO, Italy, <sup>2</sup>Dipartimento di Fisiologia Umana e generale - Università di Bologna, Bologna, BO, Italy
- P.8 Correlations between tongue position and postural control**  
Fabio Scoppa<sup>1</sup>, Antonio Ferrante<sup>1</sup>, <sup>1</sup>Sapienza, University of Rome, Rome, Italy
- P.9 Multimodal representation of visual perception for guiding locomotion in area PEc of macaque monkey**  
Milena Raffi<sup>1</sup>, Chiara Carrozzini<sup>1,2</sup>, Salvatore Squatrito<sup>1</sup>, <sup>1</sup>Dept of Human and General Physiology - University of Bologna, Bologna, Italy, <sup>2</sup>Dept of Electronics, Computer Science & Systems, University of Bologna, Bologna, Italy
- P.10 The supraspinal locomotion network in progressive supranuclear palsy: brain metabolism during actual locomotion in FDG-PET.**  
Andreas Zwergal<sup>1</sup>, Christian LaFougere<sup>1</sup>, Peter Bartenstein<sup>1</sup>, Stefan Lorenz<sup>1</sup>, Marianne Dieterich<sup>1</sup>, Thomas Brandt<sup>1</sup>, Klaus Jahn<sup>1</sup>, <sup>1</sup>University of Munich, Munich, Germany
- P.11 Gait during continuous walking: impact of friction, surface condition, and perception**  
Chien-Chi Chang<sup>1</sup>, Wen-Ruey Chang<sup>1</sup>, Mary F. Lesch<sup>1</sup>, <sup>1</sup>Liberty Mutual Research Institute for Safety, Hopkinton, MA, United States
- P.12 Imaging supraspinal locomotor control in humans**  
Klaus Jahn<sup>1</sup>, Angela Deutschländer<sup>1</sup>, Thomas Stephan<sup>1</sup>, Andreas Zwergal<sup>1</sup>, Virginia Flanagan<sup>1</sup>, Thomas Brandt<sup>1</sup>, <sup>1</sup>University of Munich, Munich, Germany
- P.13 Proprioception of postural joint rotations: the consequences of short range muscle stiffness and fluctuating muscle activity in relation to human standing**  
Ian Loram<sup>1</sup>, Martin Lakie<sup>2</sup>, Irene Di Giulio<sup>1</sup>, Constantinos Maganaris<sup>1</sup>, <sup>1</sup>Manchester Metropolitan University, Manchester, United Kingdom, <sup>2</sup>University of Birmingham, Birmingham, United Kingdom
- P.14 Online visual control of reach-to-grasp reactions evoked by unpredictable balance perturbations**  
Kenneth Cheng<sup>1,2</sup>, Sandra McKay<sup>1,2</sup>, Emily King<sup>1,2</sup>, Brian Maki<sup>1,2</sup>, <sup>1</sup>Sunnybrook Health Sciences Centre, Toronto, ON, Canada, <sup>2</sup>University of Toronto, Toronto, ON, Canada
- P.15 Visuomotor control of step descent: evidence of specialised role of lower visual field**  
Matthew Timmis<sup>1</sup>, Simon Bennett<sup>2</sup>, John Buckley<sup>1</sup>, <sup>1</sup>University of Bradford, Bradford, United Kingdom, <sup>2</sup>Liverpool John Moores University, Liverpool, United Kingdom
- P.16 Human gaze control during walking over obstacles**  
Sandra Keller Chandra<sup>1</sup>, Johannes Vockeroth<sup>5</sup>, Dominik Straumann<sup>2,4</sup>, Christopher J. Bockisch<sup>2,4</sup>, Stefan Hegemann<sup>3,4</sup>, Volker Dietz<sup>1,4</sup>, Huub van Hedel<sup>1,4</sup>, <sup>1</sup>Spinal Cord Injury Center, Balgrist University Hospital, Zurich, Switzerland, <sup>2</sup>Neurology Department, Zurich University Hospital, Zurich, Switzerland, <sup>3</sup>ENT Department, Zurich University Hospital, Zurich, Switzerland, <sup>4</sup>ZIHP, University of Zurich, Zurich, Switzerland, <sup>5</sup>Clinical Research Neurology, LMU, Munich, Germany
- P.17 The influence of vestibulo-visual integration on postural stability during standing**  
David Jessop<sup>1,2</sup>, Bradford J. McFadyen<sup>1,2</sup>, Laurent Bouyer<sup>1,2</sup>, <sup>1</sup>Center for Interdisciplinary Research in Rehabilitation and Social Integration (CIRRS), Quebec, Canada, <sup>2</sup>Department of Rehabilitation, Faculty of Medicine, Laval University, Quebec, Canada

**P.18 Foot anatomy specialization for postural sensation and control**

W. Geoffrey Wright<sup>1</sup>, Yuri Ivanenko<sup>2</sup>, Victor Gurfinkel<sup>3</sup>, <sup>1</sup>Temple University, Philadelphia, PA, United States, <sup>2</sup>IRCCS Fondazione Santa Lucia, Rome, Italy, <sup>3</sup>OHSU, Portland, OR, United States

**P.19 Effect of scene complexity on optic flow perception: preliminary results**

Dan Moldoveanu<sup>1,2</sup>, Jessica Berard<sup>1,2</sup>, Joyce Fung<sup>1,2</sup>, Anouk Lamontagne<sup>1,2</sup>, <sup>1</sup>McGill University, Montreal, Quebec, Canada, <sup>2</sup>Jewish Rehabilitation Hospital (CRIR research centre), Laval, Quebec, Canada

**P.20 Does the non-glabrous skin on the dorsum of the ankle in humans have a role in position sense?**

Catherine Lowrey<sup>1</sup>, Nick Strzalkowski<sup>1</sup>, Leah Bent<sup>1</sup>, <sup>1</sup>University of Guelph, Guelph, Ontario, Canada

**P.21 Preferential loss of distal large-fibre afferents after pyridoxine intoxication and the role of ganglion cell size in determining neuronal vulnerability**

Manuel Hülliger<sup>1</sup>, Robert W. Banks<sup>2</sup>, <sup>1</sup>University of Calgary, Calgary, Alberta, Canada, <sup>2</sup>University of Durham, Durham, United Kingdom

**P.22 The temporal coupling between limb movements and gaze during precision stepping is preserved over different step size and gait speed conditions**

Rob den Otter<sup>1</sup>, Leonora J. Mouton<sup>1</sup>, <sup>1</sup>University of Groningen, Groningen, Netherlands

**P.23 Where and how far ahead do we look when we ascend or descend a staircase?**

Rob den Otter<sup>1</sup>, Leonora J. Mouton<sup>1</sup>, <sup>1</sup>University of Groningen, Groningen, Netherlands

**P.24 Pictorial depth perception and postural stability**

Zoi Kapoula<sup>1</sup>, Marie-Sarah Adenis<sup>1</sup>, Thanh-Thuan Lê<sup>1</sup>, Qing Yang<sup>1</sup>, <sup>1</sup>Laboratoire IRIS, Physiopathologie de la Vision et Motricité Binoculaire, FRE3154, CNRS, Paris, France

**P.26 Does increased postural threat lead to more conscious control of posture?**

Jennifer L. Huffman<sup>1</sup>, Brian C. Horslen<sup>2</sup>, Mark G. Carpenter<sup>2</sup>, Allan L. Adkin<sup>1</sup>, <sup>1</sup>Faculty of Applied Health Sciences, Brock University, St. Catharines, Ontario, Canada, <sup>2</sup>School of Human Kinetics, University of British Columbia, Vancouver, British Columbia, Canada

**P.27 Manipulating balance efficacy: its effects on perceived and actual balance in healthy young adults**

Larkin Lamarche<sup>1,2</sup>, Jennifer L. Huffman<sup>2</sup>, Kimberley L. Gammage<sup>2</sup>, Allan L. Adkin<sup>2</sup>, <sup>1</sup>Department of Exercise Sciences, University of Toronto, Toronto, Ontario, Canada, <sup>2</sup>Faculty of Applied Health Sciences, Brock University, St. Catharines, Ontario, Canada

**P.28 Differential changes in soleus Hoffman and tendon tap reflexes with increased postural threat**

Brian C. Horslen<sup>1</sup>, J. Timothy Inglis<sup>1</sup>, Mark G. Carpenter<sup>1</sup>, <sup>1</sup>University of British Columbia, Vancouver, BC, Canada

**P.29 Turning emotion into motion: use of Argentine tango dancing to ameliorate depression**

Rosa Pinniger<sup>1</sup>, Patricia McKinley<sup>2</sup>, <sup>1</sup>University of New England, Armidale, NSW, Australia, <sup>2</sup>McGill University, Montreal, Quebec, Canada

**P.30 Improvements in mediolateral COP during single-support training balance after cognitive dual-task training in healthy older adults**

Karen Li<sup>1</sup>, Eugenie Roudaia<sup>2</sup>, Maxime Lussier<sup>3</sup>, Louis Bherer<sup>3</sup>, Alain Leroux<sup>1</sup>, Patricia McKinley<sup>4</sup>, <sup>1</sup>Concordia University, Montreal, QC, Canada, <sup>2</sup>McMaster University, Hamilton, ON, Canada, <sup>3</sup>Université de Québec à Montréal, Montreal, QC, Canada, <sup>4</sup>McGill University, Montreal, QC, Canada

**P.31 The modulation of working memory capacity through manipulation of postural demands under dual task conditions.**

Carrie Elaine Little<sup>1</sup>, Edward Vogel<sup>1</sup>, Paul van Donkelaar<sup>1</sup>, Li-Shan Chou<sup>1</sup>, Marjorie Woollacott<sup>1</sup>, <sup>1</sup>University of Oregon, Eugene, OR, United States

**P.32 Influence of chronic pain on gait and cognitive function in older adults: a potential mediator of fall risk?**

Jeffrey Hausdorff<sup>1,2</sup>, Suzanne Leveille<sup>3,4</sup>, Lew Lipsitz<sup>3,4</sup>, William Milberg<sup>3,4</sup>, Tali Herman<sup>1</sup>, Nir Giladi<sup>1,2</sup>, <sup>1</sup>Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, <sup>2</sup>Tel Aviv University, Tel Aviv, Israel, <sup>3</sup>Harvard Medical School, Boston, United States, <sup>4</sup>Beth Israel Deaconess Medical Center, Boston, United States

**P.33 How does explicit prioritization alter walking during dual tasking? Age effects on gait speed and variability**

Galit Yogeve-Seligmann<sup>1,2</sup>, Yael Rotem-Galili<sup>3</sup>, Nir Giladi<sup>4,5</sup>, Ruth Dickstein<sup>6</sup>, Jeffrey M. Hausdorff<sup>1,7</sup>, <sup>1</sup>Lab for Gait & Neurodynamics, Dept of Neurology, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, <sup>2</sup>Graduate School of Medicine, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel, <sup>3</sup>Department of Gerontology, Faculty of Social Welfare and Health Sciences, University of Haifa, Haifa, Israel, <sup>4</sup>Dept of Neurology, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, <sup>5</sup>Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel, <sup>6</sup>Department of Physical Therapy, Faculty of Social Welfare and Health Sciences, University of Haifa, Haifa, Israel, <sup>7</sup>Division on Aging, Harvard Medical School, Boston, Mass., United States

**P.34 Understanding the influence of fear of falling on clinical balance control in community-dwelling elderly individuals**

Laura Hauck<sup>1</sup>, James Frank<sup>3</sup>, Mark Carpenter<sup>2</sup>, <sup>1</sup>University of Waterloo, Waterloo, ON, Canada, <sup>2</sup>University of British Columbia, Vancouver, BC, Canada, <sup>3</sup>University of Windsor, Windsor, ON, Canada

**P.35 Effects of temporal predictability of perturbations to standing balance on response time**

Hui-Ya Chen<sup>1</sup>, Shun-Hwa Wei<sup>2</sup>, Wen-Hsu Sung<sup>2</sup>, Wen-Wei Tsai<sup>3</sup>, Alan Wing<sup>4</sup>, <sup>1</sup>School of Physical Therapy, Chung Shan Medical University, Taichung, Taiwan, <sup>2</sup>Department of Physical Therapy and Assistive Technology, National Yang-Ming University, Taipei, Taiwan, <sup>3</sup>Department of Mechanical Engineering, National Central University, ChungLi, Taiwan, <sup>4</sup>Behavioural Brain Sciences Centre, School of Psychology, University of Birmingham, Birmingham, United Kingdom

**P.36 Common and disparate effects of dual tasking in three different motor tasks**

Galit Yogeve-Seligmann<sup>1,2</sup>, Nir Giladi<sup>3,4</sup>, Leor Grudlinger<sup>1</sup>, Aner Weiss<sup>1</sup>, Jeffrey M. Hausdorff<sup>1,5</sup>, <sup>1</sup>Lab for Gait & Neurodynamics, Dept of Neurology, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, <sup>2</sup>Graduate school of medicine, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel, <sup>3</sup>Dept of Neurology, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, <sup>4</sup>Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel, <sup>5</sup>Division on Aging, Harvard Medical School, Boston, Mass, United States

**P.37 Effects of varying cognitive load on young and older healthy adults during fast treadmill walking**

Karen Li<sup>1</sup>, Gabriela Abbud<sup>1</sup>, Virginia Penhune<sup>1</sup>, Richard DeMont<sup>1</sup>, <sup>1</sup>Concordia University, Montreal, QC, Canada

**P.38 Synchronisation of walking with a variable metronome**

Rachel Wright<sup>1</sup>, David Pratt<sup>2</sup>, Joseph Bevins<sup>1</sup>, Alan Wing<sup>3</sup>, <sup>1</sup>University of Worcester, Worcester, United Kingdom, <sup>2</sup>West Midlands Rehabilitation Centre, Birmingham, United Kingdom, <sup>3</sup>University of Birmingham, Birmingham, United Kingdom

**P.39 Effects of task-frame orientation and rotation on posture-cognition dual-tasking**

Suvobrata Mitra<sup>1</sup>, Hayley Boulton<sup>1</sup>, <sup>1</sup>University of Warwick, Coventry, United Kingdom

**P.40 The effects of anxiety-related stiffness extend beyond standing balance control**

Justin R. Davis<sup>1</sup>, Adam D. Campbell<sup>1</sup>, Mark G. Carpenter<sup>1</sup>, <sup>1</sup>University of British Columbia, Vancouver, BC, Canada

**P.41 Attentional dynamics in gait initiation toward different directions**

Philippe Corbeil<sup>1,2</sup>, Julien Rodrigue<sup>1</sup>, Evelyn Anaka<sup>1</sup>, <sup>1</sup>Université Laval, Québec, Canada, <sup>2</sup>Centre d'excellence sur le vieillissement de Québec, Québec, Canada

**P.42 Effects of dual-tasking on gaze behaviour during stair locomotion**

Veronica Miyasike-da-Silva<sup>1</sup>, William E. McIlroy<sup>1</sup>, <sup>1</sup>Department of Kinesiology, University of Waterloo, Waterloo, Canada

**P.43 Effects of motor and cognitive dual-task conditions on the modulation of withdrawal reflexes during split-belt walking**

Dario G. Liebermann<sup>1</sup>, Erika G. Spaich<sup>2</sup>, Tal Krasovsky<sup>3</sup>, Ole K. Andersen<sup>2</sup>, <sup>1</sup>Department of Physical Therapy, Sackler Faculty of Medicine, Tel-Aviv University, Tel Aviv, Israel, <sup>2</sup>Center for Sensory-Motor Interaction, Aalborg University, Aalborg, Denmark, <sup>3</sup>Department of Physical and Occupational Therapy, McGill University, Montreal, Canada

**P.44 Multiple dimensions of balance are adversely affected in older adults with Fibromyalgia**

Danielle Hernandez<sup>1</sup>, Debra Rose<sup>1</sup>, Camila Guimaraes<sup>1</sup>, Dana Rutledge<sup>1</sup>, Jessie Jones<sup>1</sup>, <sup>1</sup>California State University, Fullerton, Fullerton, CA, United States

**P.45 Evaluation of the posture of patients suffering from Fibromyalgia**

Di Mascio Gérard<sup>1</sup>, Grancher Claudine<sup>1</sup>, <sup>1</sup>Sam Instruments, Rouen, France

**P.46 Measurement of cognitive and emotional influences in relation to Fibromyalgia**

Pietro Bressan<sup>1</sup>, Jean Louis Limongi<sup>1</sup>, Anne Françoise Poisneuf<sup>1</sup>, Palo Serena<sup>1</sup>, Maurizio Manfredi<sup>1</sup>, <sup>1</sup>international association for research and postural teaching, Le Mans, France

**P.47 Anticipation of the effects of stress at work on the basis of posturographical parameters**

Jean Louis Limongi<sup>1</sup>, Anne Françoise Poisneuf<sup>1</sup>, Pietro Bressan<sup>1</sup>, Michel Ritz<sup>1</sup>, <sup>1</sup>Int.Ass. for research and postural teaching, Le Mans, France

**P.48 Postural sway in dual task conditions**

Darja Rugelj<sup>1</sup>, France Sevšek<sup>1</sup>, Urška Cigale<sup>1</sup>, <sup>1</sup>University of Ljubljana, Faculty of health Sciences, Ljubljana, Slovenia

**P.49 Step length adjustments during the approach of a raised surface**

Uffe Laessoe<sup>1,2</sup>, Michael Voigt<sup>1</sup>, <sup>1</sup>Center for Sensory-Motor Interaction (SMI), Aalborg University, Aalborg, Denmark, <sup>2</sup>Dept. of Physiotherapy, University College North Jutland, Aalborg, Denmark

**P.50 Strategies to circumvent suddenly appearing obstacles in young and older adults**

Mirjam Pijnappels<sup>1</sup>, Idsart Kingma<sup>1</sup>, Jaap van Dieën<sup>1</sup>, <sup>1</sup>Research Institute MOVE, Faculty of Human Movement Sciences, VU University, Amsterdam, Netherlands

**P.51 Effects of pilates training on shoulder and upper body posture and movement.**

Kim Emery<sup>1</sup>, Sophie J De Serres<sup>1</sup>, Ann McMillan<sup>2</sup>, Julie N Cote<sup>1</sup>, <sup>1</sup>McGill University, Montreal, Quebec, Canada, <sup>2</sup>University of Montreal, Montreal, Quebec, Canada

**P.52 Sensory re-weighting induced by challenging balance exercises**

Atsushi Itaya<sup>1</sup>, Kiyonao Hasegawa<sup>1</sup>, <sup>1</sup>Comprehensive Human Sciences, University of Tsukuba, Tsukuba, Japan

**P.53 Effects of dual task balance training in healthy elderly people**

Makoto Hiyamizu<sup>1</sup>, Shu Morioka<sup>1</sup>, Atsushi Matsuo<sup>1</sup>, Koji Shomoto<sup>1</sup>, Tomoaki Shimada<sup>2</sup>, <sup>1</sup>Kio University, Nara, Japan, <sup>2</sup>Kobe University, Kobe, Japan

**P.54 Muscle specific adaptation to vibration-induced postural disturbance.**

Sébastien Caudron<sup>1</sup>, Lucas Langlois<sup>2</sup>, Vincent Nougier<sup>3</sup>, Michel Guerraz<sup>1</sup>, <sup>1</sup>Laboratoire de Psychologie et de NeuroCognition - Grenoble Universités, Grenoble, France, <sup>2</sup>Laboratoire de Physiologie de l'Exercice - Université de Savoie, Le Bourget du lac, France, <sup>3</sup>Laboratoire TIMC-IMAG - Equipe Santé, Plasticité, Motricité - Grenoble Universités, Grenoble, France

- P.55 Adaptations to repeated slips during forward and backward walking**  
Brooke Coley<sup>1</sup>, Rakié Cham<sup>1</sup>, <sup>1</sup>University of Pittsburgh, Pittsburgh, PA, United States
- P.56 Gender differences in postural control in individuals with visual impairments**  
Christopher Ray<sup>1,2</sup>, Steven Wolf<sup>3,4</sup>, <sup>1</sup>University of Texas at Arlington, Arlington, Texas, United States, <sup>2</sup>Dallas VA Medical Center, Dallas, Texas, United States, <sup>3</sup>Emory University School of Medicine, Atlanta, Georgia, United States, <sup>4</sup>Atlanta VA Rehab R&D, Decatur, Georgia, United States
- P.57 The immediate effect of moderate physical activity on the postural stability of older people**  
Thorlene Egerton<sup>1</sup>, Sandra Brauer<sup>1</sup>, Andrew Cresswell<sup>1</sup>, <sup>1</sup>The University of Queensland, Brisbane, QLD, Australia
- P.59 The influence of the action observation in learning of the standing balance performance**  
Atsushi Matsuo<sup>1,2</sup>, Makoto Hiyamizu<sup>1</sup>, Hiroshi Maeoka<sup>1</sup>, Shu Morioka<sup>1</sup>, Keiko Seki<sup>2</sup>, <sup>1</sup>Kio University, Nara, Japan, <sup>2</sup>Kobe University, Kobe, Japan
- P.60 Learning effect in a dynamic balance control**  
Micaela Schmid<sup>1,2</sup>, Alessandra Bottaro<sup>2</sup>, Marco Schieppati<sup>1,2</sup>, <sup>1</sup>Department of Experimental Medicine, University of Pavia, Pavia, Italy, <sup>2</sup>Human Movement Laboratory (CSAM), Fondazione Salvatore Maugeri (IRCCS), Scientific Institute of Pavia, Pavia, Italy
- P.61 Postural orientation in microgravity**  
Marianne Vaugoyeau<sup>1</sup>, Pierre-Yves Chabeauti<sup>1</sup>, Christine Assaiante<sup>1</sup>, <sup>1</sup>CNRS\_ universit  Proven , LNIA, Marseille, France
- P.62 The effect of age on practice-related changes in postural regulation during continuous, variable amplitude oscillations of the support surface**  
Karen Van Ooteghem<sup>1,4</sup>, James S. Frank<sup>2,4</sup>, Fay B. Horak<sup>3</sup>, <sup>1</sup>University of Waterloo, Waterloo, Ontario, Canada, <sup>2</sup>University of Windsor, Windsor, Ontario, Canada, <sup>3</sup>Oregon Health and Sciences University, Portland, Oregon, United States, <sup>4</sup>Schlegel-UW Research Institute for Aging, Waterloo, Ontario, Canada
- P.63 Dynamic and static balance in visually impaired older adults**  
Elizabeth Dannenbaum<sup>1</sup>, Dahlia Kairy<sup>1,2</sup>, Daphne Mulrooney<sup>3</sup>, Alexander Winkler-Schwartz<sup>1,4</sup>, Joyce Fung<sup>1,5</sup>, <sup>1</sup>Jewish Rehabilitation Hospital Research Site of CRIR, Laval, Quebec, Canada, <sup>2</sup>Department of Health Administration, University of Montr al, Montreal, Quebec, Canada, <sup>3</sup>MAB-Mackay Rehabilitation Centre, Montreal, Quebec, Canada, <sup>4</sup>Marianopolis College, Montreal, Quebec, Canada, <sup>5</sup>McGill University School of Physical and Occupational Therapy, Montreal, Quebec, Canada
- P.64 Motor learning onboard the ISS: the kinematic and dynamic strategies in whole body motor tasks**  
Claudia Casellato<sup>1</sup>, Alessandra Pedrocchi<sup>1</sup>, Giancarlo Ferrigno<sup>1</sup>, <sup>1</sup>Politecnico di Milano, Milano, Italy
- P.65 The effect of repeated exposure to visual motion stimuli on visual dependence in normal healthy subjects**  
Marousa Pavlou<sup>1</sup>, Catherine Quinn<sup>1</sup>, Kate Murray<sup>2</sup>, Chrysoula Spyridakou<sup>2</sup>, Mary Faldon<sup>2</sup>, Adolfo Bronstein<sup>2</sup>, <sup>1</sup>King's College London, London, United Kingdom, <sup>2</sup>Imperial College London, London, United Kingdom
- P.68 Postural balance of obese children under altered sensory conditions**  
Eva D'Hondt<sup>1</sup>, Matthieu Lenoir<sup>1</sup>, Ilse Gentier<sup>1</sup>, Emilie Snoeck<sup>1</sup>, Charlotte Hanssens<sup>1</sup>, Marjolein Blomme<sup>1</sup>, <sup>1</sup>Ghent University, Ghent, Belgium
- P.69 The effect of changes in body dimensions on the walking pattern of toddlers between 15 and 36 months**  
Marleen Van Dam<sup>1</sup>, Ann Hallemans<sup>1</sup>, Peter Aerts<sup>1</sup>, <sup>1</sup>University of Antwerp, Antwerp, Belgium, <sup>2</sup>University of Ghent, Ghent, Belgium
- P.71 Normative data of posturographic indices in Italian children**  
Monica Cazzagon<sup>1</sup>, Andrea Merlo<sup>2,3</sup>, Marco Parla<sup>1</sup>, Anna Sartori<sup>1</sup>, <sup>1</sup>IRCCS "Eugenio Medea", Udine-Friuli Venezia Giulia, Italy, <sup>2</sup>LAM - Laboratorio Analisi Movimento, AUSL Reggio Emilia, Dip. Riabilitazione, Osp. Correggio, Correggio-Reggio Emilia, Italy, <sup>3</sup>Scuola di Dottorato in "Medicina e Terapia Sperimentale, Universit  degli Studi di Torino, Facolt  di Medicina e Chirurgia, Dipartimento di Scienze Biomediche e Oncologia Umana, Torino-Piemonte, Italy
- P.72 Influence of vision on multiplanar sit-to-stand kinematics in children and adults**  
Jill Slaboda<sup>1</sup>, Emily Keshner<sup>1</sup>, <sup>1</sup>Temple University, Philadelphia, PA, United States
- P.74 Children balance: a force platform evaluation**  
Michele Gallamini<sup>1</sup>, <sup>1</sup>R&D RGMD S.p.A., Genova, Italy
- P.75 The relationship of motor behaviour and task-oriented postural control in children and adolescents with down syndrome**  
I-Man Long<sup>1</sup>, Hui-Yi Wang<sup>2</sup>, <sup>1</sup>Faculty of Medicine, Department of Neurology, Kaohsiung Medical University, Kaohsiung, Taiwan, <sup>2</sup>Department of Physical Therapy, Kaohsiung Medical University, Kaohsiung, Taiwan
- P.76 Longitudinal monitoring of gait and mobility in Parkinson's Disease using an instrumented version of the timed up and go test**  
Cris Zampieri<sup>1</sup>, Arash Salarian<sup>1</sup>, Patricia Carlson-Kuhta<sup>1</sup>, Kamiar Aminian<sup>2</sup>, John Nutt<sup>1</sup>, Fay Horak<sup>1</sup>, <sup>1</sup>Oregon Health & Science University, Portland, OR, United States, <sup>2</sup>Ecole Polytechnique F d rale de Lausanne, Lausanne, Switzerland
- P.77 Effect of age on body segment tilt responses to lower leg muscles vibration**  
Diana Abrahamova<sup>1</sup>, Martina Mancini<sup>2</sup>, Frantisek Hlavacka<sup>1</sup>, Lorenzo Chiari<sup>2</sup>, <sup>1</sup>Institute of Normal and Pathological Physiology SAS, Bratislava, Slovakia, <sup>2</sup>Biomedical Engineering Unit, Dept. of Electronics, Computer Science & Systems, University of Bologna, Bologna, Italy

- P.78 Limits of stability of individuals with Parkinson's disease**  
Luci Teixeira-Salmela<sup>1</sup>, Cláudia Diniz<sup>1</sup>, Fátima Rodrigues de Paula<sup>1</sup>, Christina Faria<sup>1</sup>, <sup>1</sup>Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil
- P.79 Longitudinal changes in quiet stance in early Parkinson's Disease**  
Patricia Carlson-Kuhta<sup>1</sup>, Robert Peterka<sup>1</sup>, John Nutt<sup>1</sup>, Fay Horak<sup>1</sup>, <sup>1</sup>Oregon Health & Science University, Portland, Oregon, United States
- P.80 The responses of homonymous muscles of both legs to stance perturbations are differently affected in unilateral Parkinson's disease**  
 Margherita Grasso<sup>1</sup>, Antonio Nardone<sup>1,4</sup>, Marco Schieppati<sup>2,3</sup>, <sup>1</sup>Posture and Movement Laboratory, Division of Physical Therapy and Rehabilitation, Scientific Institute of Veruno, Salvatore Maugeri Foundation (IRCCS), Veruno (NO), Italy, <sup>2</sup>Centro Studi Attività Motorie, Scientific Institute of Pavia, Salvatore Maugeri Foundation (IRCCS), Pavia, Italy, <sup>3</sup>Department of Experimental Medicine, University of Pavia, Pavia, Italy, <sup>4</sup>Department of Clinical and Experimental Medicine, University of Eastern Piedmont, Novara, Italy
- P.81 Abnormal Postural Feedback Scaling in Parkinsonian Disease**  
Seyoung Kim<sup>1</sup>, Fay B. Horak<sup>2</sup>, Patricia Carlson-Kuhta<sup>2</sup>, Suhyung Park<sup>1</sup>, <sup>1</sup>Department of Mechanical Engineering, KAIST, Daejeon, Korea, Republic of, <sup>2</sup>Neurological Sciences Institute, Oregon Health & Science University, Portland, United States
- P.82 Preparation for compensatory forward stepping in Parkinson's disease**  
Laurie King<sup>1</sup>, Patricia Carlson-Kuhta<sup>1</sup>, Penelope Hogarth<sup>1</sup>, Rebecca St George<sup>1</sup>, Fay Horak<sup>1</sup>, <sup>1</sup>Oregon Health & Science University, Portland, Oregon, United States
- P.83 The effects of transcranial electrostimulation on quiet stance and some clinical symptoms in Parkinson's disease**  
Ekaterina Kornuykhina<sup>1</sup>, Lyudmila Chernikova<sup>1</sup>, Irina Ivanova-Smolenskaya<sup>1</sup>, Aleksei Karabanov<sup>1</sup>, <sup>1</sup>Research Central of Neurology of RAMS, Moscow, Russian Federation
- P.84 Detecting asymmetries in balance control in Parkinson's disease patients with system identification techniques**  
Tijtske Boonstra<sup>1,2</sup>, Edwin van Asseldonk<sup>1</sup>, Jeroen van Vugt<sup>3</sup>, Herman van der Kooij<sup>1,4</sup>, Bas Bloem<sup>2</sup>, <sup>1</sup>Department of Biomechanical Engineering, University of Twente, Enschede, Netherlands, <sup>2</sup>Department of Neurology, Donders Center for Neuroscience, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, <sup>3</sup>Department of Neurology, Medisch Spectrum Twente, Enschede, Netherlands, <sup>4</sup>Department of Biomechanical Engineering, Delft University of Technology, Delft, Netherlands
- P.85 The effect of idiopathic Parkinson's disease on seated trunk reactions**  
Katherine E. Pahl<sup>1</sup>, Bastiaan R. Bloem<sup>2</sup>, Romeo. Chua<sup>1</sup>, J. Timothy. Inglis<sup>1</sup>, Mark G. Carpenter<sup>1</sup>, <sup>1</sup>Human Kinetics, University of British Columbia, Vancouver, Canada, <sup>2</sup>Neurology, Radboud University Nijmegen Medical Center, Nijmegen, Netherlands
- P.86 A sensitivity comparison of clinical tests of postural instability in patients with Huntington's disease**  
Hana Brozova<sup>1</sup>, Martin Kucharik<sup>1</sup>, Jan Stochl<sup>2</sup>, Jiri Klempir<sup>1</sup>, Evzen Ruzicka<sup>1</sup>, Jan Roth<sup>1</sup>, <sup>1</sup>Department of Neurology, Charles University, 1st Faculty of Medicine, Prague, Czech Republic, <sup>2</sup>Department of Kinanthropology, Charles University, Faculty of Physical Education and Sport, Prague, Czech Republic
- P.87 Age-related striatal dopaminergic denervation and severity of a slip perturbation**  
Rakie Cham<sup>1</sup>, Stephanie A Studenski<sup>1,3</sup>, Nicolaas I Bohner<sup>2,4</sup>, <sup>1</sup>University of Pittsburgh, Pittsburgh, PA, United States, <sup>2</sup>University of Michigan, Ann Arbor, MI, United States, <sup>3</sup>PA VA GRECC, Pittsburgh, PA, United States, <sup>4</sup>MI VA GRECC, Ann Arbor, MI, United States
- P.88 Clinical factors associated with self selected gait speed and step variability in diabetic patients walking in a challenging environment**  
Lara Allet<sup>1,2</sup>, Stéphane Armand<sup>1</sup>, Kamiar Aminian<sup>3</sup>, Rob de Bie<sup>2</sup>, Alain Golay<sup>1</sup>, Eling de Bruin<sup>4</sup>, <sup>1</sup>Geneva University Hospital and University of Geneva, Geneva, Switzerland, <sup>2</sup>Maastricht University and Caphri research school, Maastricht, Netherlands, <sup>3</sup>Laboratory of Movement Analysis and Measurement, EPFL, Lausanne, Switzerland, <sup>4</sup>Institute of Human Movement Sciences and Sport, ETH, Zürich, Switzerland
- P.89 Balance control in patients with proximal versus distal muscle weakness**  
 Corinne GC Horlings<sup>1,2</sup>, Ursula M Küng<sup>2</sup>, Nicol Voermans<sup>1</sup>, Gerald Hengstman<sup>1</sup>, Anneke Van der Kooij<sup>3</sup>, Baziél GM Van Engelen<sup>1</sup>, Bastiaan R Bloem<sup>1</sup>, John HJ Allum<sup>2</sup>, <sup>1</sup>Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, <sup>2</sup>University Hospital Basel, Basel, Switzerland, <sup>3</sup>Academic Medical Centre, Amsterdam, Netherlands
- P.90 Balance is impaired in people with chronic respiratory disease**  
Michelle Smtih<sup>1</sup>, Angela Chang<sup>1</sup>, Paul Hodges<sup>1</sup>, <sup>1</sup>The University of Queensland, St.Lucia, QLD, Australia
- P.91 Postural muscle-modes synergies in mild cerebellar ataxia**  
Tadayoshi Asaka<sup>1</sup>, Yun Wang<sup>2</sup>, Toyo Kikumoto<sup>3</sup>, Katsunori Ikoma<sup>3</sup>, <sup>1</sup>Hokkaido University, Sapporo, Hokkaido, Japan, <sup>2</sup>Hiroshima University, Higashi Hiroshima, Hiroshima, Japan, <sup>3</sup>Hokkaido University Hospital, Sapporo, Hokkaido, Japan
- P.92 The effect of lesions to the olivo-cerebellar pathway on obstacle avoidance locomotion in rat.**  
Yamato Sato<sup>1</sup>, Sho Aoki<sup>1</sup>, Dai Yanagihara<sup>1</sup>, Kazuhisa Sakai<sup>2</sup>, Tsutomu Hashikawa<sup>2</sup>, <sup>1</sup>The University of Tokyo, Meguro-ku, Tokyo, Japan, <sup>2</sup>RIKEN Brain Science Institute, Wako, Saitama, Japan
- P.93 Locomotor adaptation and aftereffects in patients with reduced somatosensory due to peripheral neuropathy**  
Karen L Bunday<sup>1</sup>, Adolfo M Bronstein<sup>1</sup>, <sup>1</sup>Imperial College London, London, United Kingdom

- P.94 Comparing psychophysical detection thresholds to very short postural perturbations in mature adults with and without diabetes**  
Charles Robinson<sup>1</sup>, George Fulk<sup>2</sup>, Sumona Mondal<sup>2</sup>, <sup>1</sup>Syracuse VAMC, Syracuse, NY, United States, <sup>2</sup>Clarkson University, Potsdam, NY, United States
- P.95 A multi-task gait analysis approach: normative data and pilot application to young CMT subjects**  
Maurizio Ferrarin<sup>1</sup>, Marco Rabuffetti<sup>1</sup>, Gabriele Bovi<sup>1</sup>, Paolo Mazzoleni<sup>1</sup>, Angelo Montesano<sup>1</sup>, Davide Pareyson<sup>2</sup>, Isabella Moroni<sup>2</sup>, Emanuela Pagliano<sup>2</sup>, Chiara Marchesi<sup>2</sup>, Elena Andreucci<sup>2</sup>, Alessia Marchi<sup>2</sup>, Anna Ardissoni<sup>2</sup>, Ettore Beghi<sup>3</sup>, <sup>1</sup>Polo Tecnologico, Fondazione Don C Gnocchi IRCCS, Milano, Italy, <sup>2</sup>Fondazione IRCCS Istituto Neurologico C Besta, Milano, Italy, <sup>3</sup>Istituto di Ricerche Farmacologiche Mario Negri, Milano, Italy
- P.96 The influence of posture on the pattern of whole-body instability in freely-standing subjects with spino-cerebellar ataxia type 6**  
Lisa M. Bunn<sup>1</sup>, Paola Giunti<sup>1</sup>, Jonathan F. Marsden<sup>2</sup>, Brian L. Day<sup>1</sup>, <sup>1</sup>University College London, London, United Kingdom, <sup>2</sup>University of Plymouth, London, United Kingdom
- P.97 Balance control in spino-cerebellar ataxia type 6: Vestibular processing unravelled**  
Lisa M. Bunn<sup>1</sup>, Jonathan F. Marsden<sup>2</sup>, Paola Giunti<sup>1</sup>, Brian L. Day<sup>1</sup>, <sup>1</sup>University College London, London, United Kingdom, <sup>2</sup>University of Plymouth, Plymouth, United Kingdom
- P.98 Gait characteristics and predictors three months after hip fracture**  
Pernille Thingstad<sup>1,3</sup>, Beatrix Vereijken<sup>2</sup>, Olav Sletvold<sup>1,3</sup>, Jorunn L. Helbostad<sup>1,3</sup>, <sup>1</sup>Department of Neuroscience, NTNU, Trondheim, Norway, <sup>2</sup>Programme of Human MOVement Science, NTNU, Trondheim, Norway, <sup>3</sup>Department of Geriatrics, St. Olav University Hospital, Trondheim, Norway
- P.99 Altered proprioceptive control induced by inspiratory muscles fatigue in persons with and without recurrent low back pain**  
Lotte Janssens<sup>1</sup>, Simon Brumagne<sup>1</sup>, Kathelijn Polspoel<sup>1</sup>, Kurt Claeys<sup>1</sup>, Thierry Troosters<sup>2</sup>, Alison McConnell<sup>3</sup>, <sup>1</sup>Musculoskeletal Research Unit, Department of Rehabilitation Sciences, Faculty of Kinesiology and Rehabilitation Sciences, University of Leuven (K.U.Leuven), Leuven, Belgium, <sup>2</sup>Respiratory Rehabilitation and Respiratory Division, University Hospitals, Leuven, Belgium, <sup>3</sup>The centre for Sports Medicine & Human Performance, Brunel University, Uxbridge, United Kingdom
- P.100 Differences in functional recovery of patients with total knee or total hip arthroplasty: one year postoperatively**  
Miranda Boonstra<sup>1</sup>, Noël Keijsers<sup>3</sup>, Wim Schreurs<sup>2</sup>, Nico Verdonshot<sup>1,4</sup>, <sup>1</sup>Radboud University Nijmegen Medical Centre, Orthopaedic Research Lab, Nijmegen, Netherlands, <sup>2</sup>Radboud University Nijmegen Medical Centre, Department of Orthopaedics, Nijmegen, Netherlands, <sup>3</sup>Department of Research, Development and Education, Sint Maartenskliniek, Nijmegen, Netherlands, <sup>4</sup>Laboratory of Biomedical Engineering, University of Twente, Enschede, Netherlands
- P.101 The recovery after total knee arthroplasty can be hampered by contralateral osteoarthritis.**  
Miranda Boonstra<sup>1</sup>, Maarten De Waal Malefijt<sup>2</sup>, Nico Verdonshot<sup>1,3</sup>, <sup>1</sup>Radboud University Nijmegen Medical Centre, Orthopaedic Research Lab, Nijmegen, Netherlands, <sup>2</sup>Radboud University Nijmegen Medical Centre, Department of Orthopaedics, Nijmegen, Netherlands, <sup>3</sup>Laboratory of Biomechanical Engineering, University of Twente, Enschede, Netherlands
- P.103 Static and dynamic posture in elderly women with hallux valgus practicing physical activity**  
Erika Nerozzi<sup>1</sup>, Claudio Tentoni<sup>1</sup>, <sup>1</sup>Facoltà di Scienze Motorie, Università di Bologna, Bologna, Italy
- P.104 Differences in proprioceptive postural control during the sit-to-stand-to-sit movement between persons with non-specific low back pain and healthy controls on a stable surface**  
Kurt Claeys<sup>1,2</sup>, Simon Brumagne<sup>1</sup>, Wim Dankaerts<sup>1,3</sup>, Henri Kiers<sup>4</sup>, Lotte Janssens<sup>1</sup>, <sup>1</sup>Musculoskeletal Research Unit, Department of Rehabilitation Sciences, Faculty of Kinesiology and Rehabilitation Sciences, Leuven, Belgium, <sup>2</sup>Department Health Care, Catholic University College of Bruges-Ostend, Bruges, Belgium, <sup>3</sup>University College Limburg, Department of Health Care, AUHL-PHL, REVAL - Rehabilitation and Health Care Research Center, Hasselt, Belgium, <sup>4</sup>Department Lifestyle and Health, Hogeschool Utrecht University of Applied Sciences, Utrecht, Netherlands
- P.105 Differences in proprioceptive postural control during the sit-to-stand-to-sit movement between persons with non-specific low back pain and healthy controls on an unstable support surface**  
Kurt Claeys<sup>1,2</sup>, Simon Brumagne<sup>1</sup>, Wim Dankaerts<sup>1,3</sup>, Lotte Janssens<sup>1</sup>, Henri Kiers<sup>4</sup>, <sup>1</sup>Musculoskeletal Research Unit, Department of Rehabilitation Sciences, Faculty of Kinesiology and Rehabilitation Sciences, Leuven, Belgium, <sup>2</sup>Department Health Care, Catholic University College of Bruges-Ostend, Bruges, Belgium, <sup>3</sup>University College Limburg, Department of Health Care, AUHL-PHL, REVAL - Rehabilitation and Health Care Research Center, Hasselt, Belgium, <sup>4</sup>Department Lifestyle and Health, Hogeschool Utrecht University of Applied Sciences, Utrecht, Netherlands
- P.106 Low back pain associates with altered activity of the cerebral cortex prior to arm movements that require anticipatory postural adjustments of the trunk**  
Jesse Jacobs<sup>1</sup>, Sharon Henry<sup>1</sup>, Keith Nagle<sup>1,2</sup>, <sup>1</sup>University of Vermont, Burlington, VT, United States, <sup>2</sup>Fletcher Allen Health Care, Burlington, VT, United States
- P.107 3D knee joint symmetry during walking on various inclines before and after ACL reconstruction: application of an inertial-based system**  
Julien Favre<sup>1</sup>, Brigitte M Jolles<sup>2,1</sup>, François Luthi<sup>3,2</sup>, Olivier Siegrist<sup>2</sup>, Kamiar Aminian<sup>1</sup>, <sup>1</sup>EPFL, Laboratory of Movement Analysis and Measurement, Lausanne, Switzerland, <sup>2</sup>CHUV, Département de l'Appareil Locomoteur, Lausanne, Switzerland, <sup>3</sup>SUVA-CARE, Clinique Romande de Réadaptation, Sion, Switzerland

- P.108 Posture analysis of patients with ankylosing spondylitis**  
Elena Carraro<sup>1</sup>, Zimi Sawacha<sup>2</sup>, Annamaria Guiotto<sup>2</sup>, Lara Bonaldo<sup>1</sup>, Claudio Cobelli<sup>2</sup>, Stefano Masiero<sup>1</sup>, <sup>1</sup>Department of Medical Surgical Specialty, Rehabilitation Service - Padova University Polyclinic, Padova, Italy, <sup>2</sup>Department of Information Engineering, University of Padova, Padova, Italy
- P.109 Vertical heterophoria, postural control and chronic back pain**  
Eric Matheron<sup>1,2</sup>, Zoï Kapoula<sup>1</sup>, <sup>1</sup>IRIS FRE 3154/CNRS : Service d'Ophtalmologie, Hôpital Européen Georges Pompidou & Service ORL et Chirurgie Cervico-faciale, Hôpital Robert Debré, Paris, France, <sup>2</sup>University of Paris V, Paris, France
- P.110 An active pain episode is associated with hypermetric automatic postural responses in individuals with chronic, recurrent low back pain compared to those without low back pain**  
Stephanie Jones<sup>1,2</sup>, Sharon Henry<sup>3</sup>, Christine Raasch<sup>4</sup>, Juvena Hitt<sup>3</sup>, Janice Bunn<sup>3</sup>, <sup>1</sup>University of Massachusetts, Amherst, Massachusetts, United States, <sup>2</sup>McGill University, McGill, Quebec, Canada, <sup>3</sup>University of Vermont, Burlington, Vermont, United States, <sup>4</sup>Exponent Failure Analysis Associates, Inc., Phoenix, Arizona, United States
- P.111 Decreased modulation of force responses to multidirectional surface perturbations from individuals in an acute flare-up of low back pain compared to those in a quiescent pain phase or those without pain history**  
Sharon Henry<sup>1</sup>, Juvena Hitt<sup>1</sup>, Stephanie Jones<sup>1,3</sup>, Janice Bunn<sup>2</sup>, <sup>1</sup>Department of Rehabilitation and Movement Science, University of Vermont, Burlington, VT, United States, <sup>2</sup>Department of Mathematics and Statistics, University of Vermont, Burlington, VT, United States, <sup>3</sup>School of Physical and Occupational Therapy, McGill University, Montreal, Quebec, Canada
- P.112 Symmetry of ground reaction forces in patients with total knee arthroplasty**  
Nicole Dinn<sup>1,2</sup>, Rajiv Gandhi<sup>3</sup>, Nizar Mahomed<sup>3</sup>, Mandy McGlynn<sup>2</sup>, John Flannery<sup>2</sup>, William Gage<sup>1,2</sup>, <sup>1</sup>York University, Toronto, ON, Canada, <sup>2</sup>Toronto Rehabilitation Institute, Toronto, ON, Canada, <sup>3</sup>Toronto Western Hospital, Toronto, ON, Canada
- P.113 Does the Genu valgum phenomenon lead to a modification of stabilometric results?**  
Anne Françoise Poisneuf<sup>1</sup>, Jean Louis Limongi<sup>1</sup>, Pietro Bressan<sup>1</sup>, <sup>1</sup>Int.Ass for research and postural teaching, Le Mans, France
- P.114 Walking outdoors or treadmill - What shall a clinician choose in post-stroke rehabilitation?**  
Birgitta Langhammer<sup>1,2</sup>, Johan K Stanghelle<sup>1,3</sup>, <sup>1</sup>Oslo University College, Oslo, Norway, <sup>2</sup>Sunnaas Rehabilitation Hospital, Nesoddtangen, Norway, <sup>3</sup>University of Oslo, Faculty of Medicine, Oslo, Norway
- P.115 Enhancing walking in people with incomplete spinal cord injury by improving swing phase activity: a pilot randomized controlled trial**  
Tania Lam<sup>1</sup>, Katherine Pahl<sup>1</sup>, Janice J. Eng<sup>1</sup>, <sup>1</sup>University of British Columbia, Vancouver, British Columbia, Canada
- P.116 Effects of gait training with body weight support system on ground level for stroke patients**  
Ana Barela<sup>1</sup>, Catarina Sousa<sup>2</sup>, Christiane Medeiros<sup>2</sup>, Tania Salvini<sup>2</sup>, Jose Barela<sup>1</sup>, <sup>1</sup>Cruzeiro do Sul University, São Paulo, SP, Brazil, <sup>2</sup>Federal University of São Carlos, São Carlos, SP, Brazil
- P.118 Study of effect of Lokomat training on the expression of the circumduction gait strategy in patients after stroke**  
Anton Klochkov<sup>1</sup>, Aleksandra Demidova<sup>1</sup>, Yulia Ermolaeva<sup>1</sup>, Marina Kurganskaya<sup>1</sup>, Ludmila Chernikova<sup>1</sup>, <sup>1</sup>Research Central of Neurology of RAMS, Moscow, Russian Federation
- P.119 Treadmill gait training with leg loading to improve locomotor performance in chronic stroke patients**  
Cyril Duclos<sup>1,3</sup>, Nicholas Bourgeois<sup>1</sup>, Laurent Bouyer<sup>2,3</sup>, Carol L Richards<sup>2,3</sup>, Sylvie Nadeau<sup>1,3</sup>, <sup>1</sup>Pathokinesiology laboratory, Centre for Interdisciplinary Research in Rehabilitation, Montreal Gingras-Lindsay Rehabilitation Institute, and School of Rehabilitation, University of Montreal, Montréal, QC, Canada, <sup>2</sup>Centre for Interdisciplinary Research in Rehabilitation and Social Integration, IRDPQ, and School of rehabilitation, Laval University, Québec City, QC, Canada, <sup>3</sup>Multidisciplinary Team in Locomotor Rehabilitation, Montréal, QC, Canada
- P.120 A body area network with vibrotactile actuation**  
Marco Benocci<sup>1</sup>, Davide Brunelli<sup>1</sup>, Elisabetta Farella<sup>1</sup>, Luca Benini<sup>1</sup>, <sup>1</sup>UNIBO, Bologna, Italy
- P.121 Healthy elderly are able to learn martial arts fall techniques to reduce hip impact force**  
Brenda Groen<sup>1,2</sup>, Ellen Smulders<sup>1,2</sup>, Digna de Kam<sup>1</sup>, Jacques Duysens<sup>1,3</sup>, Vivian Weerdesteyn<sup>1,4</sup>, <sup>1</sup>Sint Maartenskliniek Research, Development and Education, Nijmegen, Netherlands, <sup>2</sup>Vrije Universiteit, Institute for Fundamental and Clinical Human Movement Sciences, Amsterdam, Netherlands, <sup>3</sup>Katholieke Universiteit Leuven, Research Center for Movement Control and Neuroplasticity, Leuven, Belgium, <sup>4</sup>Radboud University Nijmegen Medical Centre, Department of Rehabilitation, Nijmegen, Netherlands
- P.122 Contextual transfer of gait adaptation for fall prevention: from moveable platform to slippery floor**  
Tanvi Bhatt<sup>1</sup>, Yi-Chung Pai<sup>1</sup>, <sup>1</sup>University of Illinois at Chicago, Physical Therapy Dept., Chicago, IL, United States
- P.123 Which part of the forefoot comes closest during swing?**  
Andrew Kerr<sup>1</sup>, Daniel Rafferty<sup>1</sup>, Gordon Hendry<sup>1</sup>, Elaine Hyslop<sup>1</sup>, <sup>1</sup>Glasgow Caledonian University, Glasgow, Scotland, United Kingdom
- P.124 Development of a posturography protocol for best identifying older fallers**  
Kimberly Edginton Bigelow<sup>1,2</sup>, Necip Berme<sup>2</sup>, <sup>1</sup>University of Dayton, Dayton, Ohio, United States, <sup>2</sup>Ohio State University, Columbus, Ohio, United States
- P.125 Voluntary Step Execution Test to Identify and Predict Falls and Injury Severity in Old Adults**  
Itshak Melzer<sup>1</sup>, Ilan Kurz<sup>1</sup>, Danit Shahar<sup>1</sup>, Lars Oddsson<sup>1</sup>, <sup>1</sup>Ben-Gurion University, Beer-Sheva, Israel, <sup>2</sup>Sister Kenny Research Center, Sister Kenny Rehabilitation Institute, Minneapolis, MN, United States

- P.126 Medio-lateral stability of sit-to-walk performance in older individuals with and without fear of falling**  
Anna Cristina Åberg<sup>1,2</sup>, Gunilla Frykberg<sup>2</sup>, Nina Mellberg<sup>2</sup>, Kjartan Halvorsen<sup>1</sup>, <sup>1</sup>The Swedish School of Sport and Health Sciences, Stockholm, Sweden, <sup>2</sup>Uppsala University, Uppsala, Sweden
- P.127 User Evaluation of Multifaceted Activity Monitoring System for Fall Prevention**  
Irene Lasorsa<sup>1,5</sup>, Nicholas Caporusso<sup>2,5</sup>, Oliviero Rinaldi<sup>4,3</sup>, Leonardo la Pietra<sup>4,3</sup>, Loredana Lunghi<sup>4</sup>, Massimo Monturano Sandra Lai<sup>4</sup>, <sup>1</sup>University of Trieste, Trieste, TS, Italy, <sup>2</sup>IMT Institute for Advanced Studies, Lucca, LU, Italy, <sup>3</sup>CINEAS, Milan, MI, Italy, <sup>4</sup>IEO European Institute of Oncology, Milan, MI, Italy, <sup>5</sup>QIRIS, Caronno P., VA, Italy
- P.128 Changes in Balance, Functional Performance and Fall risk after Whole Body Vibration Training and Vitamin D supplementation in Institutionalized Elderly Women, A 6 month Randomized Controlled Trial**  
Sabine Verschueren<sup>1</sup>, An Bogaerts<sup>1</sup>, Christophe Delecluse<sup>2</sup>, Albrecht Claessens<sup>2</sup>, Koen Milisen<sup>3</sup>, Steven Boonen<sup>3</sup>, <sup>1</sup>Department of Rehabilitation Sciences, Katholieke Universiteit Leuven, Leuven, Belgium, <sup>2</sup>Department of Biomedical Kinesiology, Katholieke Universiteit Leuven, Leuven, Belgium, <sup>3</sup>Division of Geriatric Medicine, Katholieke Universiteit Leuven, Leuven, Belgium
- P.129 Eye and body movement strategies during turning tasks in older adults at risk of falls**  
Todd Stretton<sup>1,2</sup>, Denise Taylor<sup>1</sup>, <sup>1</sup>Health and Rehabilitation Research Centre, AUT University, Auckland, New Zealand, <sup>2</sup>School of Physiotherapy, AUT University, Auckland, New Zealand
- P.130 The influence of fear and physiological risk of falls on gait in older people**  
Daina Sturmiens<sup>1</sup>, Kim Delbaere<sup>1,2</sup>, Geert Crombez<sup>2</sup>, Stephen Lord<sup>1</sup>, <sup>1</sup>Prince of Wales Medical Research Institute, Sydney, Australia, <sup>2</sup>Ghent University, Ghent, Belgium
- P.131 Identifying the causes of falls through wearable sensors**  
Omar Aziz<sup>1</sup>, Shahram Payandeh<sup>1</sup>, Stephen Robinovitch<sup>1</sup>, <sup>1</sup>Simon Fraser University, Vancouver, British Columbia, Canada
- P.132 Effect of a new fall prevention program designed for persons with osteoporosis**  
 Ellen Smulders<sup>1,2</sup>, Jacques Duysens<sup>1,3</sup>, Wim van Lankveld<sup>4</sup>, Vivian Weerdesteyn<sup>1,5</sup>, <sup>1</sup>Research, Development & Education, Sint Maartenskliniek, Nijmegen, Netherlands, <sup>2</sup>Institute for Fundamental and Clinical Human Movement Sciences, Vrije Universiteit, Amsterdam, Netherlands, <sup>3</sup>Department of Biomedical Kinesiology (FaBeR), Leuven, Belgium, <sup>4</sup>Department of Rheumatology, Sint Maartenskliniek, Nijmegen, Netherlands, <sup>5</sup>Department of Rehabilitation Medicine, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands
- P.133 Kinetic study of gait termination**  
Gilles Ryckewaert<sup>1</sup>, Séverine Bleuse<sup>2</sup>, Jean-Louis Blatt<sup>2</sup>, Luc Defebvre<sup>1</sup>, Arnaud Delval<sup>1</sup>, <sup>1</sup>Department of Neurology, Roger Salengro Hospital, Lille, France, <sup>2</sup>Department of Clinical Neurophysiology, Roger Salengro Hospital, Lille, France
- P.135 The predictive value of postural balance measurements for falls in the elderly**  
Jaap Swanenburg<sup>1,3</sup>, Eling D. de Bruin<sup>2</sup>, Daniel Uebelhart<sup>1,3</sup>, Theo Mulder<sup>4,5</sup>, <sup>1</sup>Department of Rheumatology and Institute of Physical Medicine, University Hospital Zurich, Zurich, Switzerland, <sup>2</sup>Institute of Human Movement Sciences and Sport, ETH, Zurich, Switzerland, <sup>3</sup>Centre of Osteoporosis, University Hospital Zurich, Zurich, Switzerland, <sup>4</sup>Royal Netherlands Academy of Arts and Sciences, Amsterdam, Netherlands, <sup>5</sup>Center for Human Movement Sciences, University Medical Center Groningen, Groningen, Netherlands
- P.136 Characterizing evoked autonomic activity in compensatory balance control**  
 Kathryn Sibley<sup>1,2</sup>, George Mochizuki<sup>2,3</sup>, Bimal Lakhani<sup>1,2</sup>, William McIlroy<sup>2,4</sup>, <sup>1</sup>University of Toronto, Toronto, Ontario, Canada, <sup>2</sup>Toronto Rehabilitation Institute, Toronto, Ontario, Canada, <sup>3</sup>Heart and Stroke Foundation Centre for Stroke Recovery, Toronto, Ontario, Canada, <sup>4</sup>University of Waterloo, Waterloo, Ontario, Canada
- P.137 "That's ok, I'm strong, I won't fall" - Is strength a good predictor of postural stability during normal quiet stance?**  
Grant Handrigan<sup>1</sup>, Philippe Corbeil<sup>1</sup>, Normand Teasdale<sup>1</sup>, Angelo Tremblay<sup>1</sup>, Martin Simoneau<sup>1</sup>, Olivier Hue<sup>2</sup>, Picard Marceau<sup>3</sup>, Simon Marceau<sup>3</sup>, <sup>1</sup>Division de Kinésiologie, Faculté de Médecine, Université Laval, Québec, Québec, Canada, <sup>2</sup>Dept. des sciences de l'activité physique, Université du Québec à Trois-Rivières, Trois-Rivières, Québec, Canada, <sup>3</sup>Faculté de médecine, Dept. de chirurgie, Université Laval, Québec, Québec, Canada
- P.138 Indomethacin does not influence postural balance and manual reaction time in healthy middle-aged individuals.**  
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- P.139 The effect of Methylphenidate on postural stability under single and dual task conditions in children with Attention Deficit Hyperactivity Disorder - A double-blind randomized control trial**  
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- P.141 Feed-forward control of walking velocity in a biologically inspired walking biped model**  
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- P.142 Joint forces and torques during human walking in shallow water**  
Maria Isabel Orsell<sup>1,2</sup>, Marcos Duarte<sup>1,2</sup>, <sup>1</sup>University of São Paulo, São Paulo, São Paulo, Brazil, <sup>2</sup>Vita Institute, São Paulo, São Paulo, Brazil

- P.143 Locomotor strategies associated with altered lower limb segmental mechanical properties**  
Jonathan Singer<sup>1</sup>, Jeremy Noble<sup>1</sup>, Stephen Prentice<sup>1</sup>, <sup>1</sup>University of Waterloo, Waterloo, Ontario, Canada
- P.144 A clinical significance of PID controller for keeping ability of lateral balance**  
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- P.145 In-vivo estimation of the forces at the cruciate ligaments during step up/down motor task**  
Luigi Bertozzi<sup>1</sup>, Rita Stagni<sup>1</sup>, Silvia Fantozzi<sup>1</sup>, Angelo Cappello<sup>1</sup>, <sup>1</sup>DEIS, University of Bologna, Bologna, Italy
- P.146 Biomechanical analysis of dual mechanisms of 2 dimensional posture sway and learning**  
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- P.147 Effect of Muscle Strength on Torque Development during Balance Recovery in Standing**  
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- P.148 Impact of reducing the foot-floor friction coefficient on the passive kinematics of walking**  
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- P.149 New spatial mechanisms for kinematic analysis of the human knee and ankle joints**  
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- P.150 The stabilizing and destabilizing forces: emerging new concepts to assess dynamic stability during functional tasks**  
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- P.151 Gait strategy changes with walking speed to accommodate biomechanical constraints**  
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- P.153 Joint moments of the lower limb: inverse dynamics versus floor reaction force vector methods**  
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- P.154 The clinical outcomes of different targets in deep brain stimulation for Parkinson's disease: an interpretation based on a computational model**  
Marco Pirini<sup>1</sup>, Laura Rocchi<sup>1</sup>, Luca Palmerini<sup>1</sup>, Lorenzo Chiari<sup>1</sup>, <sup>1</sup>Dept Electronics, Computer Science & Systems, University of Bologna, Bologna, Italy
- P.155 Standardization of clinical stabilometry is a part of posturology**  
Dimitri Skvortsov<sup>1</sup>, Bernard Weber<sup>2</sup>, Pierre-Marie Gagey<sup>2</sup>, <sup>1</sup>MBN, Moscow, Russian Federation, <sup>2</sup>Institut de Posturologie, Paris, France
- P.156 Nonlinear analysis of posturographic data in de-novo Parkinson's patients**  
Luigi Ladislao<sup>1</sup>, Marco Guidi<sup>2</sup>, Sandro Fioretti<sup>1</sup>, <sup>1</sup>Department of Biomedical, Electronics and Telecommunications Engineering, Università Politecnica delle Marche, Ancona, Italy, <sup>2</sup>Neurology O.U., INRCA Hospital, Ancona, Italy
- P.157 The Brownian diffusion revisited in its application to postural sway**  
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- P.159 Basic law of oscillation of center of pressure, could we use it at clinical decision making?**  
Dmitri Skvortsov<sup>1</sup>, Irina Krivoshey<sup>1,2</sup>, Helen Mamicheva<sup>1,3</sup>, <sup>1</sup>7-th Rehab Hosp, Moscow, Russian Federation, <sup>2</sup>City Hospital 8, Moscow, Russian Federation, <sup>3</sup>Center of speech disturbances, Moscow, Russian Federation
- P.160 Presence of two-scaling regions in DFA plots of 60 second quiet-standing**  
Kimberly Edginton Bigelow<sup>1,2</sup>, Necip Berme<sup>2</sup>, <sup>1</sup>University of Dayton, Dayton, Ohio, United States, <sup>2</sup>Ohio State University, Columbus, Ohio, United States

- P.162 Measurement of the scapular profiles by the fringe projection Moiré technique**  
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- P.163 The 3-D path of the body center of mass during walking. Normative parameters from adult human walking on instrumented treadmill.**  
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- P.164 Detection of regularity sway of the gravic body sway. Comparison of the example of normality, vestibular neuronitis, lateralcanal paralysis, cerebellar lesion and spino cerebellar degeneration (SCD)**  
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- P.165 Defining a set of stance tasks in progressively increasing difficulty using time domain posturographic measures**  
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- P.166 Drag percent: an alternative approach to estimating stance timing when gait is impaired**  
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- P.167 Measuring knee skeletal internal/external rotation with skin markers**  
Alberto Leardini<sup>1</sup>, Marco Cecchetti<sup>1</sup>, Fabio Biagi<sup>1</sup>, Pius Wong<sup>3</sup>, Kaat Desloovere<sup>2</sup>, <sup>1</sup>Istituto Ortopedico Rizzoli, Bologna, Italy, <sup>2</sup>Katholieke Universiteit, Leuven, Belgium, <sup>3</sup>European Centre for Knee Research, Smith&Nephew Inc., Leuven, Belgium
- P.168 Detection of a turn while walking based on curvature-velocity analysis**  
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- P.169 Does a specific visual target improve the reliability of postural stability measurements?**  
Graham Chapman<sup>1</sup>, Valentina Graci<sup>1</sup>, John Buckley<sup>2</sup>, David Elliott<sup>1</sup>, <sup>1</sup>Vision and Mobility Research Laboratory, Bradford School of Optometry and Vision Science, University of Bradford, Bradford, United Kingdom, <sup>2</sup>Vision and Mobility Research Laboratory, School of Engineering, Design, and Technology, University of Bradford, Bradford, United Kingdom
- P.170 Assessment of gait stability and variability in humans and bipedal robots**  
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- P.171 Swing and stance time asymmetry in self-selected and in fast walking speed in healthy adults**  
Ruth Dickstein<sup>1</sup>, Einat Kodess<sup>1</sup>, Gali Dar<sup>1</sup>, Kafri Michal<sup>1</sup>, Enbar Agnon<sup>1</sup>, <sup>1</sup>University of Haifa, Haifa, Israel
- P.172 Automatic detection of postural sway characteristics in diabetics, post-stroke and ankylosing spondylitis based on cluster analysis**  
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- P.173 Comparison of different video gait analysis rating scales to analyse improvement in gait function after locomotion therapy**  
Roland Müller<sup>1</sup>, Stefanie Hänseler<sup>1</sup>, Andreas Meyer-Heim<sup>2</sup>, <sup>1</sup>ETH Zurich, Institute of Human Movement Sciences and Sport, Zurich, Switzerland, <sup>2</sup>University Children's Hospital Zurich, Rehabilitation Centre, Affoltern, Switzerland
- P.174 Criteria for gait asymmetry in patients with hip osteoarthritis**  
Caroline Hodt-Billington<sup>1</sup>, Jorunn L. Helbostad<sup>2</sup>, Rolf Moe-Nilssen<sup>1</sup>, <sup>1</sup>Department of Public Health and Primary Health Care, University of Bergen, Bergen, Norway, <sup>2</sup>Dept. of Neuromedicine, Faculty of Medicine, Norwegian University of Science and Technology, Trondheim, Norway
- P.175 Posturography measures for healthy young adults during quiet sitting in comparison with quiet standing**  
Albert Vette<sup>1,2</sup>, Kei Masani<sup>1,2</sup>, Vivian Sin<sup>1</sup>, Milos Popovic<sup>1,2</sup>, <sup>1</sup>University of Toronto, Toronto, Ontario, Canada, <sup>2</sup>Toronto Rehabilitation Institute, Toronto, Ontario, Canada
- P.176 Force plate targeting alters the variability of temporal and spatial gait measures**  
Martin Vergara<sup>1</sup>, Tina Mayberry<sup>1</sup>, Mark Cheung<sup>1</sup>, William Gage<sup>1,2</sup>, <sup>1</sup>York University, Toronto, Ontario, Canada, <sup>2</sup>Toronto Rehabilitation Institute, Toronto, Ontario, Canada
- P.177 Estimating the centre of gravity by double integration in the frequency domain of the horizontal accelerations measured by a 3D force plate: application in standing**  
olivier caron<sup>1</sup>, <sup>1</sup>Université du Sud Toulon Var, La Garde cedex, Var, France

- P.178 Body sway on force platform: FFT analysis**  
Michele Gallamini<sup>1</sup>, <sup>1</sup>R&D RGMD S.p.A., Genova, Italy
- P.179 Step characteristics while walking on drywall stilts: expert vs. novice users**  
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- P.180 Muscle activation patterns during ground and stilt walking**  
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- P.181 Changes in sitting posture affect regional chest wall shape and motion during breathing**  
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- P.182 How Accurately People Can Discriminate the Differences of Floor Materials with Various Elasticities**  
Yoshiyuki Kobayashi<sup>1</sup>, Toshiaki Hara<sup>2</sup>, Hiroshi Fujimoto<sup>3</sup>, <sup>1</sup>National Rehabilitation Center for Persons with Disabilities, Tokorozawa, Saitama, Japan, <sup>2</sup>KAJIMA Coporation, Akasaka, Tokyo, Japan, <sup>3</sup>Waseda University, Tokorozawa, Saitama, Japan
- P.183 Adulthood development of postural control: the role of sensory information and martial arts expertise**  
Caroline Smolders<sup>1</sup>, Mihalis Doulmas<sup>1</sup>, Ralf Krampe<sup>1</sup>, <sup>1</sup>KU Leuven, Leuven, Belgium
- P.184 Postural control of firefighters in eyes open and closed condition after maximal exercise test**  
Anne Punakallio<sup>1</sup>, Harri Lindholm<sup>1</sup>, Raija Ilmarinen<sup>1</sup>, Helena Mäkinen<sup>1</sup>, <sup>1</sup>Finnish Institute of Occupational Health, Helsinki, Finland
- P.185 Energetics of movement: a whole body application of an energetic muscle model in unilateral leg press using a hybrid dynamic approach**  
Maria Cristina Bisi<sup>1</sup>, Rita Stagni<sup>1</sup>, Han Houdjik<sup>2</sup>, Gianni Gnudi<sup>1</sup>, <sup>1</sup>Department of Electronics, Computer Science and Systems, Bologna, Italy, <sup>2</sup>Research Institute MOVE, Faculty of Human Movement Sciences, Amsterdam, Netherlands
- P.186 Whole-body adaptations to repetitive motion-induced arm fatigue in persons with chronic neck/shoulder pain**  
Karen Lomond<sup>1,2</sup>, Evelyne Boulay<sup>1,2</sup>, Julie Cote<sup>1,2</sup>, <sup>1</sup>Department of Kinesiology and Physical Education, McGill University, Montreal, Quebec, Canada, <sup>2</sup>CRIR Research Centre, Jewish Rehabilitation Hospital site, Montreal, Quebec, Canada
- P.187 Effect of weight-bearing training on physical function and postural modulation of soleus H-reflex in humans**  
Ken'ichi Egawa<sup>1</sup>, Yoshinori Kitabatake<sup>1</sup>, Yukio Oida<sup>2</sup>, Shinichiro Shiozawa<sup>3</sup>, Motoyoshi Morishita<sup>3</sup>, Takashi Arao<sup>4</sup>, <sup>1</sup>Physical Fitness Research Institute, Meiji Yasuda Life Foundation of Health and Welfare, Tokyo, Japan, <sup>2</sup>Chukyo University Life System Science and Technology, Aichi, Japan, <sup>3</sup>Japanese School of Technology for Social Medicine, Tokyo, Japan, <sup>4</sup>Waseda University Faculty of Sport Sciences, Saitama, Japan
- P.188 Stabilometric study of the effect of heel height on postural control**  
Thierry Ferrus<sup>1</sup>, Arnaud de Tauzia<sup>1</sup>, Pierre-Marie Gagey<sup>1</sup>, <sup>1</sup>API, PARIS, France
- P.190 Balance assessment in physical education; measurement error in the class room**  
Eling D. de Bruin<sup>1</sup>, Claudio Cucuzza<sup>1</sup>, Kurt Murer<sup>1</sup>, <sup>1</sup>Institute of Human Movement Sciences and Sport, ETH, Zurich, Switzerland
- P.191 Balance disturbances associated with transitioning to a standing posture**  
Angela DiDomenico<sup>1</sup>, Raymond W. McGorry<sup>1</sup>, <sup>1</sup>Liberty Mutual Research Institute for Safety, Hopkinton, MA, United States
- P.192 The effect of mechanical and sensorimotor perturbations on the physiological cost of walking**  
Justin Chee<sup>1</sup>, Luc Tremblay<sup>1</sup>, Karl Zabjek<sup>1</sup>, <sup>1</sup>University of Toronto, Toronto, Canada