

4th ISHF2010

Final Programme

Conference hall
(FME, CTU in Prague, Technická 4)

Monday, June 14

- 9:00 Registration
9:45 Coffe
10:00 Opening Ceremony
10:20 **Keynote**
Implicit sensorimotor controls for interaction with dynamic environments
Hiroaki Gomi (Japan)
Chairman: *Jaromír Volf*
- 11:00 **HUMAN MOTION ANALYSIS 1**
Chairman: *Jaromír Volf*
- 11:00 Muscle activation pattern in step-tracking wrist movement predicted by “final-position control hypothesis” with internal models
Kambara, H., Shin, D., Koike, Y. (Japan)
- 11:20 Combined mechanisms of internal model control and impedance control during reaching movements under complex force fields
Naoki Tomi, Manabu Gouko, Koji Ito (Japan)
- 11:40 Measurement of step length in pedestrian counterflow
Yamasaki, H., Sekiya, N. (Japan)
- 12:00 Lunch
- 13:40 **HUMAN MOTION ANALYSIS 2**
Chairman: *Koji Ito*
- 13:40 Choosing a control strategy in unstable bimanual task
Devjani J. Saha, Pietro Morasso (Italy)
- 14:00 Sparse linear regression for reconstructing EMG from EEG current sources estimated using variational bayes
Yoshimura, Natsue, Omata, Kei, DaSalla, Charles S., Hanakawa, Takashi, Sato, Masa-aki, Koike, Yasuharu (Japan)
- 14:20 Lung motion prediction by static neural networks
Ricardo Rodriguez, Kei Ichiji, Ivo Bukovsky, Jiri Bila, Noriasu Hojna (Czech Republic/Japan)

- 14:40 **MOTOR LEARNING**
Chairman: *Yasuharu Koike*
- 14:40 Case study of EEG (electroencephalogram) – FES (functional electrical stimulation) system
Mitsuru Takahashi, Kotaro Takeda, Yohei Otaka, Rieko Osu, Takashi Hanakawa, Manabu Gouko, Koji Ito (Japan)
- 15:00 Motor learning by attentive observation
Toshiyuki Kondo, Kazuto Nakamura, Takayuki Nozawa (Japan)
- 15:20 A power assist device based on joint equilibrium point estimation from electromyography
Kawase Toshihiro, Kambara Hiroyuki, Koike Yasuharu (Japan)
- 15:40 Coffee Break
- 16:00 – **POSTER PRESENTATIONS**
17:00 Chairman: *Yasuharu Koike*
- P1 Evaluation of functional roles of phase resetting in generation of adaptive human bipedal locomotion based on a neuromusculoskeletal model
Shinya Aoi, Naomichi Ogihara, Tetsuro Funato, Yasuhiro Sugimoto, Kazuo Tsuchiya (Japan)
- P2 A robust patterns embeded in the kinematics of human locomotion under various environments
Funato Tetsuro, Aoi Shinya, Tsuchiya Kazuo (Japan)
- P3 Motion measurement of 2-wheeled skateboard and sinusoidal approximation of input force trajectory
Satoshi Ito, Shouta Takeuchi, Minoru Sasaki(Japan)
- P4 Identification of feedforward-like and feedback-like controllers for wrist movement in human
Jongho Lee, Yasuhiro Kagamihara and Shinji Kakei (Japan)
- P5 Human hand abilities analyses
Mihaela Ioana Baritz (Romania)
- 19:30 Symposium Dinner

Tuesday, June 15

- 9:00 **Keynote**
New neural architectures and new adaptive evaluation of chaotic time series
Jiří Bila (Czech Republic)
Chairman: *Pietro Morasso*
- 9:40 **HUMAN PERCEPTION AND COGNITION**
Chairman: *Pietro Morasso*
- 9:40 A fundamental study of a state representation for robots using f -divergence
Manabu Gouko, Koji Ito (Japan)
- 10:00 Study of optimization of cooperative motion between two persons by mutual tracking experiments
Yoshikatsu Hayashi, Ken Sugawara, Yasuji Sawada (Japan)
- 10:20 Unexpected versus ill separable situations
Jiri Bila, Jakub Jura (Czech Republic)
- 10:40 Modeling handwriting: from critical points to shapes
Zenzeri Jacopo, Mohan Vishwanathan, Morasso Pietro (Italy)
- 11:00 Coffee Break
- 11:20 **INTERACTION OF PERCEPTION AND MOVEMENT 1**
Chairman: *Kanstantsin Miatliuk*
- 11:20 Intermanual transfer of handwriting skills: role of visual and haptic assistance
Angelo Basteris, Lino Bracco, Vittorio Sanguineti (Italy)
- 11:40 The effect of voluntary movement in audio-haptic temporal order judgment task
M. Yokoyama, S. Yoshida, H. Ora, K. Nozawa, T. Ogata, Y. Miyake (Japan)
- 12:00 Human's – pilot's features during aircraft flight control from Automatic regulation viewpoint
Jalovecky Rudolf, Janu Premysl (Czech Republic)
- 12:20 Lunch
- 14:00 **INTERACTION OF PERCEPTION AND MOVEMENT 2**
Chairman: *Dušan Šimšik*
- 14:00 Analysis of synergy for dampening hand vibration during walking
Shunta TOGO, Takahiro KAGAWA and Yoji UNO (Japan)
- 14:20 Postural responses of backward balance loss during walking on a treadmill
Takahiro Kagawa, Yu Ohta, Yoji Uno (Japan)
- 14:40 Research of the fall risks decreasing in the senior's gait in Slovakia
Samer Abdo Saleh Al-Rabeei, Dušan Šimšik, Alena Galajdová, Marianna Andrášová (Slovak Republic)
- 15:00 Interaction modeling of biomechanical object and its environment
Kanstantsin Miatliuk (Poland)
- 15:20 Coffee Break
- 15:40 - 16:40 **EXCURSION – LABORATORY**
- 19:30 Concert

Wednesday, June 16

- 9:00 **Keynote**
Tactile information and its using by measurement and analysis of human functions
Jaromír Volf (Czech Republic)
Chairman: *Stanislava Papežová*
- 9:40 **MEASUREMENT OF QUANTITIES RELATED TO HUMAN FUNCTIONS 1**
Chairman: *Stanislava Papežová*
- 9:40 Kinanthropometry: Measuring and accuracy of measurement achieved through e-learning
Fragoso, Isabel, Fernandes, António A., Massuça, Luís, Fernandes, Ana (Portugal)
- 10:00 An analysis of kinematic gait data variability
Dolna Zlatica, Simsik Dusan, Galajdova Alena, Andrejiova Miriam, Szerdiova Lenka (Slovak Republic)
- 10:20 Coffee Break
- 10:40 **MEASUREMENT OF QUANTITIES RELATED TO HUMAN FUNCTIONS 2**
Chairman: *Isabel Fragoso*
- 10:40 Hand expander as the tool for a sportsman's physiological condition estimation
Oleg Dmitriyev, Vladimir Fetisov, Dmitriy Ilyuschenkov (Russia)
- 11:00 Evaluation of the influence of the magnetic field on a living tissue
Papezova Stanislava, Papez Vaclav (Czech Republic)
- 11:20 Nonlinear modelling improvement of stochastic processes analysis in posturography
Miroslav Kopecky, Ondrej Cakrt, Josef Kokes (Czech Republic)
- 11:45 Closing Ceremony