



IEEE SMC 2014

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<http://www.smc2014.org/>

Special Session Call for Papers

SMC2014 Special Session on **Modelling, analysis and control of human-machine motor coordination**

Special Session organizer: Professor Mario di Bernardo

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Introduction:

Movement coordination involves many levels of the motor control: between individual muscles, between joints, between limbs and between human individuals. Effectors are organised to control coordination states of the body and the environment. The development of robotic and virtual environments necessitates understanding of the control mechanisms underlying movement coordination in humans with the aim of developing tools and strategies allowing for real-time adaptation of cybernetic virtual partners (e.g. robots, avatars etc) able to mimic and reproduce human dynamics.

This requires studying dynamics of movement coordination combining in a highly interdisciplinary manner know-how from different disciplines spanning from systems and control theory to neuroscience, robotics and cybernetics with the aim of modelling, analysing and synthesising (feedback) control techniques able to reproduce human behaviour. The aim of this special session is to bring together experts from different areas of science and engineering to discuss this topic in an highly interdisciplinary manner. The session will include both methodological and applied talks on all aspects of the problem including presentation of the research currently being carried out under the scope of the research project AlterEgo funded by the European Union (for further information see <http://www.euromov.eu/alterego/>)

Indicative Topics:

visual control of locomotion, movement imitation, functional architectures in behaviour, perception and cognition, perception-action coupling in driving, coordination in living things, principles and mechanisms of coordination dynamics, interpersonal coordination, movement control and coordination, motor learning, functional organization of perceptual-motor behaviour, behavioural

patterns at the organism level, dynamics of human perception, action and cognition, cooperative behaviour in neural and human motor coordination

Important Dates:

April 7, 2014: Deadline for submission of full-length papers to special sessions.

May 25, 2014: Acceptance/Rejection Notification.

July 9, 2014: Final camera-ready papers due in electronic form.

Submission:

Please contact the Special Session organizers for arrangement of submission in the first instance. All submissions may well need to be uploaded to SMC14 main conference online submission system. All submitted papers of Special Sessions have to undergo the same review process (three completed reviews per paper). The technical reviewers for each Special Session paper will be members of the SMC 2014 Program Committee and qualified peer-reviewers to be nominated by the Special Session organizers.