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SERVIZIO SANITARIO REGIONALE  
EMILIA-ROMAGNA  
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DIPARTIMENTO INTERAZIENDALE DI NEUROSCIENZE E RIABILITAZIONE

Direttore: Prof. Nino Basaglia

12 Giugno 2018 ore 16.30, Aula 5 Polo Didattico Cona

# Lower limb motor adaptations: neuromechanics and use in rehabilitation

The term “motor adaptations” describes the trial-by-trial alteration in motor commands that happen in response to a perturbation or a modification in the movement environment. The mechanisms driving motor adaptations have been widely studied in the upper limbs, primarily during reaching movements. In recent years a fertile literature has also investigated motor adaptations during walking, nevertheless, the neuromechanical processes driving lower limb adaptations are not clear yet. In this seminar I will go through some of the recent findings, from mine and other labs, on lower limbs motor adaptations and I will use these findings to propose a framework for the use of motor adaptation in robot-assisted gait therapy

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## Biosketch

Dr. Giacomo Severini is a Lecturer in Biomedical Engineering in the School of Electrical and Electronic Engineering at University College Dublin since 2016. At UCD he is co-director, together with Dr. Donal Holland, of the Rehabilitation Engineering and Robotics laboratory. He is member of the UCD Centre for Biomedical Engineering and is Future Funded Investigator at the Insight center for Data Analytics.

His research is focused on the study of human motor control and motor learning as a mean for developing novel concepts and tools for improving rehabilitation of impaired individuals. He is particularly interested in the development and use of robots in various aspects of the rehabilitation process.

Dr. Severini received his MS and PhD degrees in Electrical Engineering and Biomedical Engineering from Roma Tre University in Rome, Italy, in 2008 and 2012, respectively. He worked as Research Associate at the Motion Analysis Laboratory of the Spaulding Rehabilitation Hospital in Boston from 2011 to 2015 and as postdoctoral researcher at Harvard Medical School from 2012 to 2015. He was also Research Associate in the neurorehabilitation unit of the Ferrara University Hospital from 2013 to 2016 and visiting fellow at Universitätsmedizin Göttingen in between September and December 2015.