Haptics in Rehabilitation, Prosthetics and Neural Engineering: Robotic Aspects and Neuro-scientific Principles

09.30 – 10.00 Welcome and Introduction to the Workshop

Section 1: Haptic Feedback and Rehabilitation Robotics

10.00 - 10.30 H. Carnahan (Memorial University of Newfoundland): What can the motor learning literature teach us about how to use rehabilitation robots?

10.30 - 11.00 W. Bachta (Université Pierre et Marie Curie): Kinesthetic biofeedback for postural control

11.00 - 11.30 COFFEE BREAK

11.30 - 12.00 D. Prattichizzo (Università di Siena/ Istituto Italiano di Tecnologia (IIT)): The role of cutaneous and kinesthetic feedback in rehabilitation

12.00 - 12.30 A. Frisoli (Scuola Superiore Sant’Anna): Effects of robotic assisted rehabilitation with upper limb exoskeletons in stroke

12.30 - 13.00 S. Mazzoleni (Scuola Superiore Sant’Anna): Robot-assisted upper limb rehabilitation: mechanisms of motor recovery in chronic and subacute stroke patients

13.00 - 14.00 LUNCH

Section 2: Sensory-Motor and Neuro-Cognitive Aspects for Haptics and Rehabilitation Robotics

14.00 - 14.30 G. Rosati (Università di Padova): Alteration of motor modules during the learning of a dynamic perturbation

14.30 - 15.00 R. Gassert (Eidgenössische Technische Hochschule (ETH) Zürich): Neurocognitive Robot-Assisted Rehabilitation of Hand Function

15.00 - 15.30 G. Gerling (University of Virginia): Neural interfaces to the sensory nervous system to restore touch and proprioception

15.30 - 16.00 COFFEE BREAK

Section 3: Haptic Feedback for Hand Prostheses

16.00 - 16.30 M. Bianchi (Istituto Italiano di Tecnologia(IIT)/ Università di Pisa): Tactile feedback for the Pisa/IIT SoftHand

16.30 - 17.00 M. O’Malley (Rice University): Natural Sensory Feedback for Intuitive Prosthesis Control

17.00 - 17.30 Discussion and Conclusions