



## Séminaires ISIR

Mercredi 12 novembre 2014 à  
10H30

**Jan Babic**

Campus Jussieu, 4 place Jussieu, Paris

**Salle de réunion H20**

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# Synthesis of skilled robotic behaviour through human sensorimotor adaptation

**Abstract :** In this talk, I will introduce a concept of obtaining complex robotic skills based on the human sensorimotor learning capabilities. The idea is to include the human in the robot control loop and to consider the target robotic platform as a tool that can be iteratively controlled by a human. The skilled control of the robot by the human provides data that are used for construction of autonomous controllers that control the robot independently of the human. Moreover I will explain how we use the same concept in the opposite direction to investigate human motor control mechanisms employed by the central nervous system during the full body motion. To demonstrate the applicability of the concept, I will present several robotic examples including humanoid postural control, cooperative dynamic manipulation skill and adaptive control of exoskeleton robots, as well as several studies of human motor control where we investigated how humans adapt the motion of the body during real-world motor learning tasks.

**Short bio :** Jan Babic is an associate professor at the Jozef Stefan Institute and a member of the Electrical Engineering Department of Ljubljana University in Slovenia. His research deals with human motor control. He is interested in understanding sensori-motor learning and adaptation mechanisms in whole-body activities, both from the Neuroscience and Robotics point of view.