Ivana Konvalinka "Interacting minds, brains, and bodies: 3 ways to couple in joint action".

When: Wednesday, September 28th, 11.00-12.30

Abstract:
Human beings have an extraordinary ability to understand and influence each other's actions and beliefs through social interaction. We are capable of coordinating our actions, goals, and intentions with those of others' in order to accomplish tasks that we cannot accomplish alone. This coordination requires an integration of cognitive, motor, and sensory processes both within and between individuals. Previous research in social cognition has mostly investigated individual brains immersed in a social context, or more recently, interactions that do not take place in real-time. In this talk, I present studies that investigate the behavioural, neural, and physiological mechanisms of joint action, when two or more individuals engage in a real-time social interaction.

The behavioural and neural mechanisms were investigated in a minimal interaction, where two people finger-tapped together in a synchronization task. Our findings suggest costly mutual and reciprocal adaptation, whereby two people adjust to one another on a tap-to-tap basis using predictive and mutually adaptive mechanisms. EEG recordings were used to explore the underlying neural oscillations, showing alpha and low beta modulations when doing the task with an adaptive person compared to a non-adaptive computer.

Physiological mechanisms were explored in a real world interaction, investigating heart-rate synchronization between performers and spectators in a fire-walking ritual. Synchronized arousal was found between fire-walkers and their relatives and friends, despite having different bodily behaviour, but not between fire-walkers and non-related spectators.

In this talk, I will present different approaches to quantifying both intra- and inter-personal effects of minimal and high-level real-time social interactions, and try to address the question of what it means to be coupled with another person.