



**University of
Zurich** ^{UZH}

Department of Economics – Neuroeconomics Seminar

March 22, 2018 - 17:00 - 18:00

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Spectral fingerprints of large-scale neuronal interactions

Normal brain function requires the concerted interaction of functionally specialized but widely distributed cortical networks. Neuronal phase-coupling may not only reflect these interactions, but may provide a causal mechanism that regulates these interactions. I will discuss a series of experiments in which we tested this hypothesis using M/EEG recordings in humans and large-scale invasive recordings in monkeys. We found that coherent oscillations are tightly linked to perceptual decisions and that the specific phase and strength of neuronal coupling predicts the encoding of sensory, memory, choice and task information at the cellular level. Together, our data suggest that cognition is mediated by coupled oscillations within large-scale cortical networks. These oscillations may reflect 'spectral fingerprints' of underlying canonical neuronal computations.