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Thema:

"Exploring Cross-Frequency Interactions in Multivariate Time Series"

Abstract:

In this talk, we will explore some characterizations of dependence between components of a multivariate time series. This work is motivated by the current interest in neuroscience which is focused on modeling functional brain connectivity which is because functional brain networks is associated with cognitive function and mental and neurological diseases. There is no single measure of dependence that can capture all facets of brain connectivity. In this talk, we shall discuss some of the well-known measures of connectivity such as partial coherence, partial correlation and partial directed coherence. Moreover, we shall present some ongoing work on spectral causality and models for exploring potential non-linear cross-frequency interactions. This is joint work with Marco Pinto (KAUST and Oslo Metropolitan University).