Seminário Séries Temporais, Ondaletas e Análise de Dados Funcionais

Dia 01/06/2017, 15h, Auditório Antonio Gilioli, IME-USP

Directed Wavelet Covariance

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We propose a wavelet decomposition of the covariance structure for non-stationary bivariate stochastic processes regarding forward and backward signals, to evaluate the directed impact within components. We present Partial Directed Coherence (PDC), discuss this measure and its limitations for non-stationary data. We also compare these two measures with Cross Wavelet Transform(XWT) and Wavelet Coherence (WTC) . Applications for the new proposed measure in simulated data and EEG data are also presented and compared with PDC and WTC.

Keywords: Time series, Cross Spectrum, Coherence, Partial Coherence, Partial Directed Coherence, Wavelet, Wavelet Correlation, Directed Wavelet Covariance.