

Tail estimation for the spectral density matrix of multivariate Gaussian random fields

Chae Young Lim

Seoul National University
E-mail: twinwood@snu.ac.kr

Abstract: Multivariate stationary Gaussian random fields are widely used to fit multivariate spatial data. The one to one correspondence between (cross-)covariance functions and (cross-)spectral densities allows us to model (cross-)spectral densities instead of (cross-)covariance functions. In this talk, we consider multivariate stationary Gaussian random fields. Under some assumptions on high-frequency behavior of (cross-)spectral densities, we introduce an approach to estimate parameters that control tail behaviors by minimizing a multivariate local Whittle likelihood type objective function. We show consistency and asymptotic normality of the estimators with simulation results.