

## Estimating the covariance function of isotropic field on the sphere

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### Abstract:

This lecture is about the statistical analysis of a Gaussian isotropic spherical random field on the unit sphere [2,7,8]. This perspective is relevant for the analysis of the Cosmic Microwave Background Radiation (CMB).

Our goal is to estimate the covariance function of the random field, in a nonparametric setting, given a single observation at each point of the discretized sphere, inspiring ideas of Prof. Yu. V. Kozachenko in the framework of harmonic analysis of non-stationary processes and isotropic random fields [1,2, 6], and estimation of their covariance functions [3,4,5]. As application, we present methodology for handling the problem of cosmic variance.

This is a joint work with M. S. Taqqu (Boston University, USA) and G. Terdik (Debrecen University, Hungary) [8]

### References:

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