

Multivariate intrinsic random functions for cokriging

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Abstract

In multivariate geostatistics, suppose that the component processes are intrinsic random functions of general orders. We introduce a generalized cross-covariance function to describe the spatial cross-dependencies in multivariate intrinsic random functions. A nonparametric method is then proposed for its estimation. Based on this class of generalized cross-covariance functions, we give cokriging equations for multivariate intrinsic random functions in the presence of measurement error. Finally, an application is given to a dataset of plutonium and americium concentrations collected from a region of the Nevada Test Site used for atomic-bomb testing.