

Estimating a Covariance Function from Fragments of Functional Data

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Functional data are often observed only partially, in the form of fragments. In that case, the standard approaches for estimating the covariance function do not work because entire parts of the domain are completely unobserved. In previous work, Delaigle and Hall (2013, 2016) have suggested ways of estimating the covariance function, based for example on Markov assumptions. In this work we take a completely different approach which does not rely on such assumptions. We show that, using a tensor product approach, it is possible to reconstruct the covariance function using observations located only on the diagonal of its domain.