



Uncertainty evaluation for functional kriging: an application to the Canadian temperature data set

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Uncertainty evaluation for functional spatial prediction remains an open issue. Prediction of a curve at an unmonitored location can be obtained using a functional kriging with external drift model that takes into account the effect of exogenous variables (either scalar or functional). To evaluate the uncertainty of a predicted curve, a semi-parametric bootstrap for spatially correlated data is adapted to functional data. Confidence bands are obtained by ordering the bootstrapped predicted curves in two different ways according to band depth and L^2 distance. The proposed approach is illustrated on a well known data set of Canadian temperature.

Keywords: bootstrap; P-spline; band depth; prediction bands.