Adaptive prediction for functional time series

Hassan Maissoro*[1], Valentin Patilea[1], and Myriam Vimond†[1]

[1]Centre de Recherche en Economie et Statistique [Bruz] – Ecole Nationale de la Statistique et de l'Analyse de l'Information [Bruz] – France

Résumé

An adaptive procedure for curve prediction for a stationary functional time series is proposed. The sample paths of the functional times series are assumed to be irregular and are observed with error at discrete times in the domain. Our linear predictor is based on the best linear unbiased predictor (BLUP) and on the adaptive nonparametric mean and autocovariance functions estimators. That is, the bandwidth parameters of these estimators are chosen adaptively with respect to the local regularity of the sample paths. The benefit of such a procedure will be a reduction in risk prediction compared to existing procedures.

Mots-Clés: BLUP, Adaptive estimator, Mean function, Autocovariance function, Kernel smoothing

*Intervenant

†Auteur correspondant: myriam.vimond@ensai.fr