



Estimation of the mean of functional time series and a two sample problem

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This paper is concerned with inference based on the mean function of a functional time series, which is defined as a collection of curves obtained by splitting a continuous time record, e.g. into daily or annual curves. We develop a normal approximation for the functional sample mean, and then focus on the estimation of the asymptotic variance kernel. Using these results, we develop and asymptotically justify a testing procedure for the equality of means in two functional samples exhibiting temporal dependence. Evaluated by means of a simulations study and application to real data sets, this two sample procedure enjoys good size and power in finite samples. We provide the details of its numerical implementation.

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