Averaging time series: a new approach using the iterated integrals signature method.

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Abstract

The aim of our work is to average multidimensional time series. We will go through their representation with integrals of various moment orders, constituting their signature. We suggest to take advantage of the Lie group structure to average signatures, using the exp and log operation of the group. We demonstrate the purpose of such method on a classical time series classification and clustering tasks.

Keywords: Time series, Lie group, Signature

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