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TITLE AND ABSTRACT

* Title

Non-linear process convolutions for multi-output Gaussian processes

* Abstract

The paper introduces a non-linear version of the process convolution formalism for building covariance functions for multi-output Gaussian processes. The non-linearity is introduced via Volterra series, one series per each output. We provide closed-form expressions for the mean function and the covariance function of the approximated Gaussian process at the output of the Volterra series. The mean function and covariance function for the joint Gaussian process are derived using formulae for the product moments of Gaussian variables. We compare the performance of the non-linear model against the classical process convolution approach in one synthetic dataset and two real datasets.

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You may optionally add your collaborators.

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