

## *Gaussian Process*

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A Gaussian Process (GP) is a stochastic process over space or time that, when restricted to a finite number of points, yields a collection of jointly Gaussian random variables. It is considered as a probabilistic supervised machine learning technique that can be applied widely in regression and classification tasks.

In this talk we illustrate the surrogate modeling capabilities of GPs in different scenarios. In the project SEMOTI we introduce a surrogate modeling approach for a deep geological repository based on GPs. The surrogate model is used as a substitute for the mechanical model in many-query scenarios, such as parameter identification.

On other hand we apply GPs to find an approximate solution for a scalar hyperbolic conservation law with uncertainty.

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