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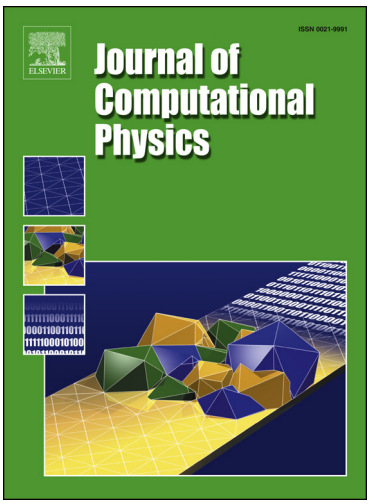

Machine Learning of Linear Differential Equations using Gaussian Processes

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Highlights

- Leverage recent advances in probabilistic machine learning to discover governing equations expressed by parametric linear operators, includ- ing ordinary and partial differential, integro-differential, and even frac- tional order operators.
- By proper placement of Gaussian process priors one can turn unknown model parameters into kernel hyper-parameters that can be efficiently identified by maximum likelihood estimation during model training.
- A general treatment of inverse problems governed by linear operators, leading to model discovery from just a handful of noisy measurements.