



## **Optimal model-free prediction from multivariate time series**

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Forecasting a complex system's time evolution constitutes a challenging problem, especially if the governing physical equations are unknown or too complex to be simulated with first-principle models.

Here a model-free prediction scheme based on the observed multivariate time series is discussed. It efficiently overcomes the curse of dimensionality in finding good predictors from large data sets and yields information-theoretically optimal predictors.

The practical performance of the prediction scheme is demonstrated on multivariate nonlinear stochastic delay processes and in an application to an index of El Niño-Southern Oscillation.