

# Download Nonlinear Mode Decomposition

In statistics, nonlinear regression is a form of regression analysis in which observational data are modeled by a function which is a nonlinear combination of the model parameters and depends on one or more independent variables. The decomposition of time series is a statistical task that deconstructs a time series into several components, each representing one of the underlying categories of patterns. There are two principal types of decomposition, which are outlined below.

**Abstract.** To solve the problems of poor performance of traditional spectrum sensing method under low signal-to-noise ratio, a new spectrum sensing method based on Empirical Mode Decomposition algorithm and K-means clustering algorithm is proposed.

**Abstract.** A nonlinear dynamics model and qualitative analysis are presented to study the key effective factors for coupled axial/torsional vibrations of a drill string, which is described as a simplified, equivalent, flexible shell under axial rotation.