

Bachelor/Master Theses Student Research Projects

At the Intersection of Dynamics and Uncertainty Quantification.

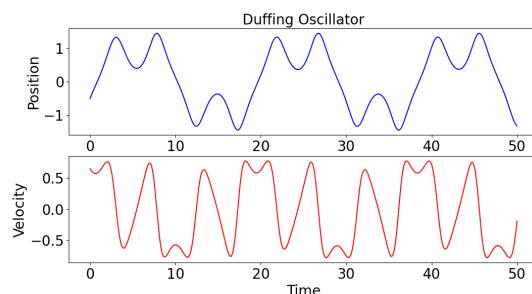
We are offering motivated students challenging bachelor/master theses or student research projects at the exciting intersection of dynamics of non linear systems, simulation of mechanical models and uncertainty quantification. As our field advances quickly, we do not maintain a list of thesis projects but determine these topics on demand.

You need to have a solid math and programming background and prior experience in dynamics and vibrations of mechanical systems, modelling as well as interests in probability theory. Knowledge of probability theory would be a plus.

The following courses are relevant for the subjects and attending one or several of them is recommended:

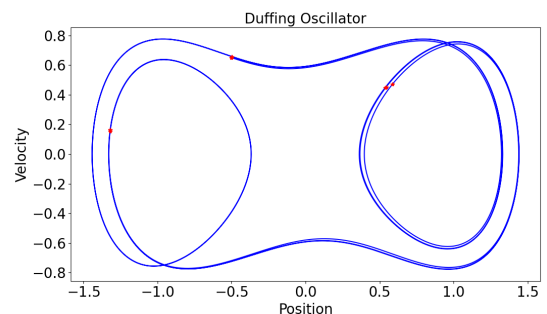
- machine dynamics
- vibrations
- finite element method
- uncertainty quantification

Duffing Oscillator: $\ddot{x} + \delta\dot{x} + \alpha x + \beta x^3 = \gamma \cos \omega t$



A list of possible research directions:

- modeling of non linear systems
- model order reduction of large models
- vibration analysis of non linear systems
- uncertainty propagation in mechanical systems



Contact:

Lars Menzel (l.menzel@tu-braunschweig.de)