

## **Dr Thomas Jungling- Research Associate**

### **Echo-state networks for nonlinear time-series analysis**

This topic includes various possible projects, in which a supervised learning method called reservoir computing will be applied to time series from nonlinear dynamical systems. The technique is itself based on the response of a large dynamical system, the echo-state network. Its response to the time series as a driving signal, the echo, will be utilized to generate the desired functionality. The goal is to realize this way a selection of time series analysis tasks like prediction, event detection, classification, calculation of characteristic measures, noise reduction, filtering, and dynamical modelling.