

## Einladung zum ICP-Kolloquium (Präsenzveranstaltung)

**Prof. Dr. Benedikt Sabass**  
**Ludwig-Maximilians-Universität München**

hält am

**Montag, 30.01.2023, 14:00 Uhr**  
**ICP Seminarraum 1.079, Allmandring 3**

einen Vortrag über das Thema:

### **“Sparse, active learning of stochastic differential equations from data”**

Abstract:

Automatic machine learning of empirical models from experimental data is becoming feasible as a result of the increased availability of computational power and dedicated algorithms. I will discuss different approaches for the inference of governing equations from data. A robust method is proposed for the sparse solution of the inverse problem related to the inference of differential equations governing deterministic and stochastic systems. Next, I present a method that we call active learning of stochastic differential equations. In active learning, an inference of the stochastic dynamics is combined with perturbations to the measured system in a feedback loop. This procedure can significantly improve the inference of global models for systems with multiple energetic minima. If time remains, I will also discuss the use of deep convolutional networks and deep attention models for the automated analysis of forces generated by biological cells.

Interessenten sind herzlich eingeladen.

Prof. Dr. C. Holm  
Dr. Rudolf Weeber  
Dr. Alexander Schlaich