



Wir laden recht herzlich zu einem Vortrag im Rahmen des

Oberseminars Numerische Optimierung

ein:

Prof. Dr. Olga Mula

(Universität Paris Dauphine)

*Optimal State and Parameter Estimation Algorithms and Applications
to Biomedical Problems*

Dienstag, 4. Mai 2021

Beginn: **16:00 Uhr**

Raum: **Zoom Room: <https://zoom.us/j/99085685058?pwd=bEZrV0FoaDdFVHdCOFRZOUNBeHVzQT09>**

Interessenten sind herzlich willkommen!

S. Volkwein

Abstract:

In this talk, we will present an overview of recent works aiming at solving inverse problems (state and parameter estimation) by combining optimally measurement observations and parametrized PDE models. After defining a notion of optimal performance in terms of the smallest possible reconstruction error that any reconstruction algorithm can achieve, we will present practical numerical algorithms based on nonlinear reduced models for which we can prove that they can deliver a performance close to optimal. We will illustrate the performance of the approach on simple benchmark examples and we will also discuss applications of the methodology to biomedical problems which are challenging due to shape variability.