



Wir laden recht herzlich zu einem Vortrag im Rahmen des

Oberseminars Numerische Optimierung

ein:

Prof Dr Georg Stadler

(New York Courant Institute)

Optimal experimental design for inverse problems governed by PDEs

Donnerstag, 18. Juni 2020

Beginn: **16:00 Uhr**

Raum: **BigBlueButton Room: <https://bbb.uni-konstanz.de/b/gab-nez-v4u>**

Interessenten sind herzlich willkommen!

G. Ciarabella

Abstract:

In this talk, I will review methods for computing A-optimal sensor placements for Bayesian linear inverse problems governed by PDEs which may contain model uncertainties. A-optimal sensor locations minimize the expected value of the trace of the posterior covariance operator or, equivalently, the trace of the inverse Hessian of a PDE-constrained optimization problem. Choosing from a finite number of given candidate sensor locations is a problem with combinatorial complexity. To find an approximate solution, we relax the problem formulation and use a continuation procedure to find sparse designs. We present numerical results for inference of the initial condition in a subsurface flow problem with uncertainty in the flow fields. I will use material from collaborations with Alen Alexanderian (NC State), Karina Koval (NYU), Noemi Petra (UC Merced), and Omar Ghattas (UT Austin).