



Wir laden recht herzlich zu einem Vortrag im Rahmen des

Oberseminars Numerische Optimierung

ein:

Prof. Dr. Felix Kwok

(Université Laval)

ParaOpt: Parareal-like method for Optimal Control Problems

Mittwoch, 25. November 2020

Beginn: **16:00 Uhr**

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

Interessenten sind herzlich willkommen!

G. Ciaramella und S. Volkwein

Abstract:

We present ParaOpt, a method inspired by Parareal for solving coupled nonlinear systems arising from optimal control problems. Just like parareal for initial value problems (IVP), we integrate with coarse time steps to predict values at intermediate states, so that the time-consuming fine integration step can be performed in parallel on different time intervals. However, the coarse system is globally coupled, unlike for IVPs. We will present a convergent analysis for the case of a linear diffusive problem, where we show that the contraction rate is independent of the number of time sub-intervals, as long as the coarse integrator uses a reasonably small time step size. We will also show numerical examples to illustrate the effectiveness of our approach.