

Einladung

In der Reihe „Chemnitzer Mathematisches Colloquium“ der Fakultät für Mathematik der TU Chemnitz spricht

Associate Professor Matthias Schlottbom, University of Twente

über das Thema

**A model reduction approach for inverse problems
with operator valued data.**

Der Vortrag findet am

Donnerstag, 4. November 2021, um 16:00 Uhr, per Videokonferenz

Zugangsdaten: <https://us02web.zoom.us/j/5396413399>

statt.

Ich möchte Sie hiermit recht herzlich zu dieser Veranstaltung einladen. Das Kolloquium wird von Herrn Prof. Dr. Jan-Frederik Pietschmann geleitet.

Abstract:

We study the efficient numerical solution of linear inverse problems with operator valued data which arise, e.g., in seismic exploration, inverse scattering, or tomographic imaging. The high-dimensionality of the data space implies extremely high computational cost already for the evaluation of the forward operator, which makes a numerical solution of the inverse problem, e.g., by iterative regularization methods, practically infeasible. To overcome this obstacle, we develop a novel model reduction approach that takes advantage of the underlying tensor product structure of the problem and which allows to obtain low-dimensional certified reduced order models of quasi-optimal rank. The theoretical results are illustrated by application to a typical model problem in fluorescence optical tomography.

Prof. Dr. Oliver Ernst
Dekan



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