

# Einladung Würzburger Mathematisches Kolloquium

Julius-Maximilians-Universität Würzburg • Institut für Mathematik

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### Game Formulation of Coupled Data Recovery and Shape Identification for Stokes Problems

Dienstag, 23. Mai 2023 • 14:15 Uhr

Seminarraum SE41 • Forschungsbau (Emil-Fischer-Straße 41, 97074 Würzburg)

Der Vortrag wird auch Zoom-Meeting übertragen: [go.uni-wue.de/ifmcolloquium-zoom](https://go.uni-wue.de/ifmcolloquium-zoom)

**Abstract.** Data completion a.k.a data recovery problems amount to solve partial differential equations in domains where overspecified boundary data are given only on a part of the whole boundary (termed accessible), the missing data on the complementary boundary being to be recovered. Such problems are referred to as Cauchy problems, and are well known, since Hadamard as severely ill-posed problems. Designing efficient and stable numerical methods is a critical issue which has attracted much attention from inverse problems specialists.

In this talk, we intend to show how a game theoretic point of view on inverse problems could facilitate the design of such efficient and stable algorithms.

We consider steady Stokes flows as a reference PDE model, and first revisit the classical data completion (Cauchy) problem. Then, we show how Nash game formulations can help to tackle inverse problems dealing with coupled boundary data recovery and obstacle or source identification.

