

Festkolloquium anlässlich des 70. Geburtstages von

## Prof. Dr. Jürgen Sprekels

Weierstraß-Institut für Angewandte Analysis und Stochastik Erhard-Schmidt-Hörsaal

Mittwoch, 24. Oktober 2018 Beginn: 14:00 Uhr

## Vorträge:

"Shape Memory Alloys, Phase-Field Models, Cahn-Hilliard Systems"

Pierluigi Colli, Dipartimento di Matematica "F. Casorati", Università di Pavia, Italy

The title collects some special keywords for research fields in the framework of phase transitions and free boundary problems describing an important research area receiving attention, interest, and a number of significant contributions from Jürgen Sprekels. This talk will offer the speaker the possibility of reviewing some models, problems, and results in the analysis and optimal control of the related systems of partial differential equations. And, more than that, it will be a pleasure for him to recall some thirty years enjoying math by his collaboration with J. Sprekels.

"Implicit Parametrizations and Applications in Optimization and Control"

Dan Tiba, Institute of Mathematics, Romanian Academy, Bucharest, Romania

The talk will discuss necessary conditions (with less Lagrange multipliers), perturbations and general algorithms in non-convex optimization problems. Optimal control problems with mixed constraints, governed by ordinary differential equations, will also be studied in this context. The treatment is based on a recent approach to implicit systems, constructing parametrizations of the corresponding manifold, via iterated Hamiltonian equations.

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