JOHANNES KEPLER UNIVERSITY LINZ

Johannes Kepler University Linz
Institute of Numerical Mathematics
Univ.-Prof. Dr. Herbert Egger

NUMA
INSTITUTE OF NUMERICAL MATHEMATICS

Talk announcement

Oliver Habrich
(NuMa)

Tuesday, Nov 22, 2022
15:30, S3 048

On uniqueness and stable estimation of multiple parameters in the Cahn-Hilliard equation

We consider the identifiability and stable numerical estimation of multiple parameters in a Cahn-Hilliard model for phase separation. Spatially resolved measurements of the phase fraction are assumed to be accessible, with which the identifiability of single and multiple parameters up to certain scaling invariances is established. A regularized equation error approach is proposed for the stable numerical solution of the parameter identification problems, and convergence of the regularized approximations is proven under reasonable assumptions on the data noise. The viability of the theoretical results and the proposed methods is demonstrated in numerical tests.