

JOHANNES GUTENBERG-UNIVERSITÄT MAINZ - 55099 Mainz

Einladung zum Vortrag
im Oberseminar Analysis

Stability and a posteriori error estimates for the Keller-Segel model

Dr. Niklas Kolbe (Universität Aachen)

Abstract: Describing chemotaxis and cell aggregation by a parabolic system of PDEs the Keller-Segel model has played an important role in mathematical biology for more than 50 years. It has been of high interest in the mathematical literature due to possible blowup in finite time and various applications, e.g. in the modelling of tumour progression and immune system dynamics. Another aspect is its numerical discretisation, which has been a challenge due to localised high concentrations appearing in the solutions.

In this talk we review the model and its most prominent properties and introduce new stability and a posteriori estimates that lay the foundation of adaptive mesh refinement schemes. We also provide estimates for modified cell migration models and discuss their implications on well-posedness of the models.

* This is joint work with Jan Giesselmann and Kiwoong Kwon from the Technical University of Darmstadt.

Alle Interessierten sind herzlich eingeladen!

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