

Kolloquium Angewandte Mathematik
Prof. Thomas Apel (BAU1)
Prof. Matthias Gerdts (LRT1)
Prof. Joachim Gwinner (LRT1)
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Vortragsankündigung

Am **Donnerstag, den 26.10.2017**, hält **um 17:00 Uhr**

Christof Haubner
(UniBw)

einen Vortrag über das Thema

Finite element approximation of a sharp interface model for tumour growth

Der Vortrag findet im **Raum 1401** in **Gebäude 33** statt.

Vortragsumfassung

In this talk we consider two sharp interface models based on [1] that describe tumour growth: one without fluid flow while the second includes Darcy-flow. We work on an open, bounded domain that is divided into a tumour and a healthy region by an interface. The task is to find the evolution of the interface, the concentration of nutrients for the tumour, a chemical potential on the tumour region (and the pressure in the model with Darcy-flow). We note that the model accounts for transport mechanisms such as chemotaxis and active transport which causes discontinuity across the interface for the nutrients (and the pressure).

We present a finite element approximation where we discretize the time, domain and interface independently, introduce finite element spaces and approximate inner products to get a discrete system. Under some mild assumptions we show existence of a unique solution.

Literatur

- [1] H. Garcke, K.F. Lam, E. Sitka, and V. Styles. A cahn-hilliard-darcy model for tumour growth with chemotaxis and active transport. *Math. Models Methods Appl. Sci.*, 26(6):1095–1148, 2016.

Alle Interessierten sind dazu herzlich eingeladen.