

Im

## Oberseminar Analysis

hält

### **Asst. Prof. Dr. Tomasz Dębiec**

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Mechanics

einen Vortrag zum Thema

## **On the incompressible limit for some tissue growth models**

#### Abstract:

I will discuss some approaches to mathematical modelling of living tissues, with application to tumour growth. In particular, I will describe recent results on to the incompressible limit of a compressible model, which builds a bridge between density-based description and a geometric free-boundary problem by passing to the singular limit in the pressure law.

The talk is divided in two parts. First, I discuss the rate of convergence of solutions of a general class of nonlinear diffusion equations of porous medium type to solutions of a Hele-Shaw-type problem. Then, I shall present a two-species tissue growth model – the main novelty here is the coupling of both species through the so-called Brinkman law which is typically used in the context of visco-elastic media, where the velocity field is linked to the total population pressure via an elliptic equation.

Datum: **Donnerstag, 8. Dezember 2022**

Zeit: **15:15 Uhr**

Raum: **WIL C 129**

Ansprechpartner: Jun.-Prof. Dr. Markus Schmidtchen

Alle Interessent:innen sind herzlich eingeladen.