



Institut für  
Angewandte Mathematik



Leibniz  
Universität  
Hannover

Institut für Angewandte Mathematik  
14.06.2021

## Oberseminar Analysis und Theoretische Physik

**Mario Fuest  
(Leibniz Universität Hannover)**

### **Facets of low regularity in cross-diffusive systems**

This talk will be concerned with various systems of parabolic differential equations with nondiagonal diffusion matrices inter alia originating in biology. The destabilizing nature of the non-diagonal entries, the so-called cross-diffusion terms, is well known; in fact, for non of the systems covered here, unconditional global existence results for classical solutions should be expected.

The low regularity of cross-diffusive systems can essentially be dealt with in two ways, both of which will be explored for certain examples. While the first one consists of rigorously showing that certain classical solutions blow up in finite time, thereby putting limits to the extent of potential global existence theorems, the second one aims to construct global solutions despite these challenges, either under certain additional assumptions (say, on the initial data) or in a more generalized sense.

**Dienstag, 06.07.2021, 15:00 Uhr  
Die Veranstaltung findet online statt.**

Interessierte erhalten die Zugangsinformationen von Prof. Lankeit (lankeit@ifam.uni-hannover.de). Mitglieder des Oberseminars haben Zugang über die Meetings der StudIP-Veranstaltung „Oberseminar Analysis und Theoretische Physik“.

**Veranstalter:**

**Prof. Dr. Wolfram Bauer  
Prof. Dr. Joachim Escher  
Prof. Dr. Johannes Lankeit  
Prof. Dr. Elmar Schrohe  
Prof. Dr. Christoph Walker**