



Institut für Mathematik
und Wissenschaftliches Rechnen
Karl-Franzens-Universität Graz



EINLADUNG

zum Vortrag von

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Titel: Biofilm models with various nonlinear effects: well-posedness and long-time behaviour

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Abstract:

In this talk, we consider two classes of strongly coupled parabolic systems that encompass different nonlinear effects: degenerate diffusion, chemotaxis and growth. These systems can serve as model prototypes in the modelling on the mesoscale level of a bacterial multicellular community where the bacteria produce biofilm and spread in the presence of a chemoattractant/nutrient.

We address the global well-posedness, the uniform boundedness and the long-time dynamics under certain 'balance' conditions and illustrate the possible model behaviour in numerical simulations for a two-dimensional setting.

Prof. Klemens **Fellner**