Speaker: **Andreas Prohl, Tübingen**

Title: **Ferromagnetism - modelling, analysis, and numerics**

Abstract: The Landau-Lifshitz-Gilbert equation is a nonlinear PDE to describe the evolution of magnetization in ferromagnetic materials: its solutions evolve on the sphere, and finite-time blow-up behavior may occur. I discuss convergent space-time discretizations in the first part of the talk.
A related study of dynamics at smaller spatial scales requires to consider the stochastic Landau-Lifshitz-Gilbert equation based on Langevin-dynamics for spins, whose statistical averages constitute magnetizations. Again, convergent discretizations are constructed, and computational studies are reported which discuss the role of the driving noise.