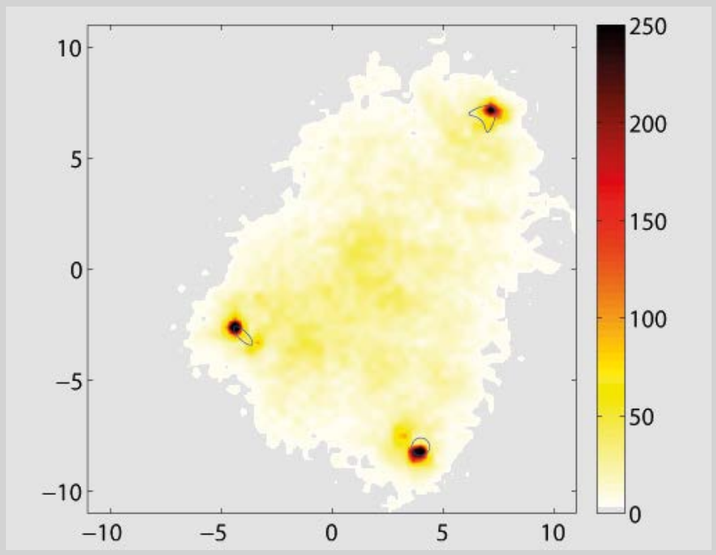

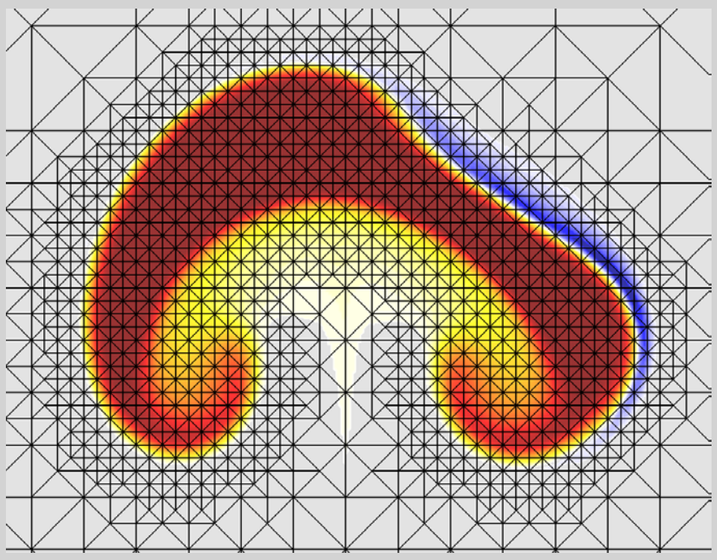

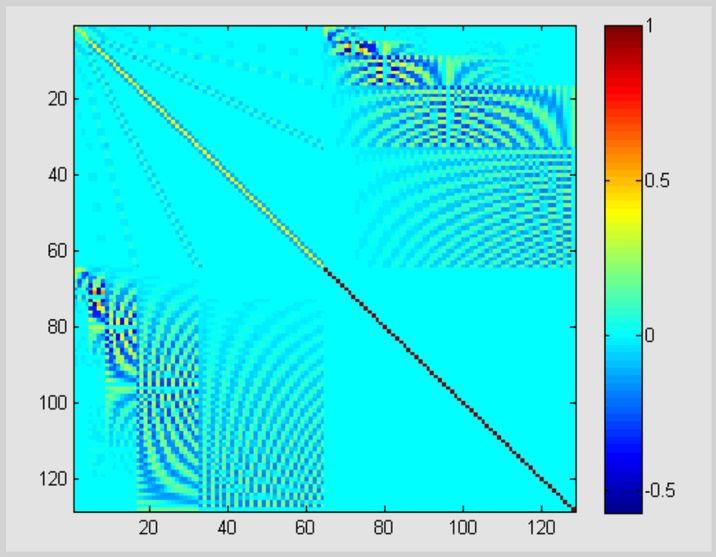

Oberseminar Numerik

Frau Ana Djurdjevac (FU Berlin)

13.12.2018
16:00 Uhr
Raum 05-426
Staudingerweg 9, 55128 Mainz

„Random parabolic partial differential equations on evolving hypersurfaces“

Abstract:

Partial differential equations with random coefficients (random PDEs) is a very developed and popular field. The variety of applications, especially in biology, motivate us to consider the random PDEs on curved moving domains. We will introduce and analyse the advection-diffusion equations with random coefficients on moving hypersurfaces. We will consider both cases, uniform and lognormal distributions of coefficients. Furthermore, we will consider the numerical discretization of the equation in the uniform case. More precisely, we will define and analyse a surface finite element discretisation of the equation and prove optimal error bounds for the semi-discrete solution and Monte Carlo samplings of its expectation.
Our theoretical findings are illustrated by numerical experiments. In the end we will present recent results considering the case when the velocity of a hypersurface is an uniformly bounded random field.

Hierzu sind alle herzlich eingeladen.

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