



Fakultät für Mathematik und Informatik Institut für Mathematik

Seminar zur Stochastik

Dienstag, 8. August 2017

10 Uhr c.t.

Seminarraum 225, Carl-Zeiß-Str. 3

Prof. Dr. Erika Hausenblas

(Montanuniversität Leoben, Österreich)

„The Stochastic Gray-Scott System“

Abstract: Reaction and diffusion of chemical species can produce a variety of patterns, reminiscent of those often seen in nature. The Gray-Scott system is a coupled equation of reaction diffusion type, modelling these kind of patterns. Depending on the parameter, stripes, waves, cloud streets, or sand ripples may appear.

These systems are the macroscopic model of microscopic dynamics. Here, in the derivation of the equation the random fluctuation of the molecules are neglected. Adding a stochastic noise, the inherent randomness of the microscopic behaviour is modelled. In particular, we add a time homogeneous spatial Gaussian random field with given spectral measure.

In the talk we first analyse the regularity of the solution of the stochastic Gray Scott system. Then, we will speak about its numerical approximation by a splitting method. This is a joint work with Thalhammer and Randrianasolo.

Alle Interessenten sind herzlich eingeladen!

Kontakt:

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