Einladung zum Oberseminar Dynamische Systeme und Kontrolltheorie

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Regularity and asymptotic properties of nonlocal stochastic evolution equations arising in chemical and biomedical models

This talk is devoted to the influence of stochastic perturbations on the long time behavior of nonlocal evolution equations. I will start with a brief overview of the theory of stochastic evolution equations, and their applications. I will specifically focus on two of such models: the bidomain model of heart tissue, and the aggregation-diffusion equation (Keller-Segel model). The nonlocal character of these equations can be present either in the differential operator (bidomain) or in the reaction term (Keller-Segel). Using the fundamental concepts in the area of stochastic analysis, semigroup theory and PDEs, in my talk, I will address the effects of noise on the existence of global vs. local solutions (Keller-Segel) and their regularity, as well as the existence of invariant measures (for the bidomain model), which is the key step in establishing the qualitative behavior of the underlying physical system. This is the joint project with Prof. Oleksandr Stanzhytskyi (Kyiv) and Prof. Ihsan Topaloglu (VCU)

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Zu diesem Vortrag laden wir Sie herzlich ein.

gez. Sergey Dashkovskiy