Fachbereich 08 – Physik, Mathematik und Informatik

INSTITUT FÜR MATHEMATIK

JOHANNES GUTENBERG UNIVERSITÄT MAINZ

M. Birkner / L. Hartung / A. Klenke

Oberseminar Stochastik

Am **Dienstag, 19. November 2024** wird

Sascha Franck (Universität Frankfurt)

einen Vortrag halten mit dem Titel:

"On the spread of an infection in a spatially distributed host population with host immunity"

Abstract:

We consider a host-parasite model in a spatially structured host environment, where immobile hosts sit on the vertices of $\mathbb{Z}$, while parasites diffuse according to simple symmetric random walks and attempt an infection when they meet a host. As hosts often have an immune response against infections, we assume that each host kills any attacking parasite and needs to be attacked a random number of times, according to some distribution I, before it will be infected. In case of a successful infection the parasite kills the host and sets free a random number of offspring. Our model is an extension of the classical frog model, in which it is known that the set of infected vertices grows linearly in time. We give conditions on I such that the parasites can survive and investigate under which further conditions the scale of the speed of infection changes below linear growth and identify the new scale of speed.

Zeit: Dienstag, 19. November 2024, 14 Uhr c.t.

Ort: Raum 05-136, Institut für Mathematik, Staudingerweg 9, 55128 Mainz

Alle Interessierten sind herzlich eingeladen!

gez. i. A. Estelle Bonmann