Fachbereich 08 – Physik, Mathematik und Informatik

INSTITUT FÜR MATHEMATIK

JOHANNES GUTENBERG UNIVERSITÄT MAINZ

M. Birkner / L. Hartung / A. Klenke

Oberseminar Stochastik

Am **Dienstag, 03. Dezember 2024** wird

Sebastian Hummel (ETH Zürich)

einen Vortrag halten mit dem Titel:

“Multi-Type Birth-Death Processes with Mean-Field Interactions for B-cell Phylodynamics”

Abstract:

Antibody binding affinity maturation is a crucial process of the adaptive immune system. Motivated to model this process, we formulate a system of multi-type birth-death processes that can interact through their empirical distribution. We show that the empirical distribution process of the system converges to a deterministic probability measure-valued flow as the system size tends to infinity. In this limit, a focal process evolves as a multi-type birth-death process with rates governed by the probability measure-valued flow, which is, in turn, the flow of the one-dimensional marginal distribution of the focal process. Individual processes become independent in the limit, which suggests inference to be feasible for this model. This is joint work with William S. DeWitt, Steven Evans, and Ella Hiesmayr.

Zeit: Dienstag, 03. Dezember 2024, 14 Uhr c.t.

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

Alle Interessierten sind herzlich eingeladen!

gez. i. V. Estelle Bonmann