Fachbereich 08 – Physik, Mathematik und Informatik

JOHANNES GUTENBERG UNIVERSITÄT MAINZ

INSTITUT FÜR MATHEMATIK

M. Birkner / L. Hartung / A. Klenke

Oberseminar Stochastik

Am **Dienstag, 2. Juni 2026**, wird

Herr **Frederic Alberti (Universität Besançon)**

einen Vortrag halten mit dem Thema:

“The Ancestral Recombination Graph in fixed pedigrees”

Abstract:

We study the ancestral processes conditional on the population pedigree under an exchangeable
diploid bi-parental population model (Cannings model). Our work analyzes
the joint genealogical structure of an arbitrary number of genetic loci, embedded within a fixed pedigree generated by the diploid Cannings
model. We derive both an annealed and a quenched scaling limit, valid for large population sizes. First, we average over the underlying pedigree as is customary in coalescent theory; then, we move on to study the genealogical structure of a sample conditioned on a fixed realisation of the pedigree. We show that these two scaling limits differ in the presence of large variation in offspring numbers, and identify the quenched scaling limit in terms of a novel "Ψ-Ancestral-Recombination-Graph" (Ψ-ARG). Here, Ψ is a Poisson point process encoding the timing and scale of multiple mergers caused by generations with large individual progeny.

Zeit: Dienstag, 2. Juni 2026, 14 Uhr c.t.

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

Alle Interessierten sind herzlich eingeladen!

gez. Matthias Birkner