

Oberseminar Mathematische Stochastik

Mittwoch, 25. Januar 2017, 17:00 Uhr, SRZ 117

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On the block counting process and the fixation line of the Bolthausen-Sznitman coalescent

Abstract:

The block counting process and the fixation line of the Bolthausen-Sznitman coalescent are analyzed. It is shown that these processes, properly scaled, converge in the Skorohod topology to the Mittag-Leffler process and to Neveu's continuous-state branching process respectively as the initial state tends to infinity. Strong relations to Siegmund duality, Mehler semigroups and self-decomposability are pointed out. Furthermore, spectral decompositions for the generators and transition probabilities of the block counting process and the fixation line of the Bolthausen-Sznitman coalescent are provided leading to explicit expressions for functionals such as hitting probabilities and absorption times.