Seminar/Talk

Vienna Probability Seminar: Recursive tree processes and the mean-field limit of stochastic flows

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Host: Jan Maas

Interacting particle systems can often be constructed from a graphical representation, by applying local maps at the times of associated Poisson processes. This leads to a natural coupling of systems started in different initial states. In the talk, we will look at interacting particle systems on the complete graph in the mean-field limit, i.e., as the number of vertices tends to infinity. We will not only be interested in the mean-field limit of a single process, but mainly in how several coupled processes behave in the limit. In particular, we want to know how sensitive the Poisson construction is to small changes in the initial state. This turns out to be closely related to recursive tree processes as studied by Aldous and Bandyopadyay, which are a sort of Markov chains in which time has a tree-like structure and in which the state of each vertex is a random function of its descendants. The abstract theory will be demonstrated on an example of a particle system with cooperative branching and deaths.This is joint work with Anja Sturm and Tibor Mach.

Tuesday, January 29, 2019 05:30pm - 06:30pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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