Lecture 3.1 (03:05-03:30)

Interacting Urn Schemes

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In this talk we will introduce few models of "interactive urns" with the goal of obtaining a limiting distribution which may be considered as example of a "self-organized criticality". We will show that if the interactions are defined via a finite or infinite network which is a Directed Acyclic Graph (DAG) with no vertex having an infinite line of descent, then limit exists for fairly general class of replacements including Pólya-type replacements. We will describe the limit as a solution of a Dirichlet Problem on an appropriate space on measures. If time permits, we will also indicate what happens if infinite line of descent is present.

This is a joint work with Deborshi Das