Séminaire de Probabilités et Statistiques

Jeudi 28 avril à 15h30
Laboratoire Dieudonné
Salle 1

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Pólya Urns Via the Contraction Method

An approach to analyse the asymptotic behaviour of Pólya urns based on a recursive decomposition is discussed. For this, a combinatorial discrete-time embedding of the evolution of the urn into random rooted trees is developed. A decomposition of these trees leads to a system of recursive distributional equations and ideas from the contraction method are used to study such systems asymptotically. Some examples are discussed which lead to limit laws with normal limit distributions, with non-normal limit distributions and with asymptotic periodic distributional behaviour. For cyclic urns these asymptotic periodicities are refined towards a central limit analogue.

The talk is based on joint work with Margarete Knape and joint work with Noela Müller.