北京理工大學

数学与统计学院学术报告

On the most uncertain match

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摘要：One of Aldous' open problems is to identify the max-entropy win-probability martingale. Namely, given two players of equal strength, such that the win-probability is a martingale diffusion, which of these processes has maximum entropy and hence gives the most uncertain match. We study a terminal-boundary value problem for the nonlinear parabolic PDE 2e_t(t,x)=log(-e_xx(t,x)) derived by Aldous and prove its well-posedness and regularity of its solution by combining PDE analysis and probabilistic tools. We establish key qualitative properties of the solution including concavity, monotonicity, convergence to a steady state for long remaining time and the asymptotic behavior shortly before the terminal time. This talk is based on the joint-work with Howison, Possamaï and Reisinger.

报告人介绍：I am a tenured assistant professor (Maître de Conférences) of Laboratory in Mathematics and Computer Science (MICS) at CentraleSupélec and a researcher in the "Fédération de Mathématiques de CentraleSupélec" (CNRS FR3487). Before joining CentraleSupélec MICS, I was postdoc respectively in Department of Mathematics, University of Michigan (2018-2020) and Mathematical Institute, University of Oxford (2016-2018). I received the Ph.D degree in Oct, 2016, from Département de Mathématiques Appliquées, École Polytechnique. My thesis advisor is Professor Nizar Touzi. Prior to that, I obtained an engineer diploma (Diplôme d'ingénieur) from Ecole Polytechnique.