

Speed of explosion for continuous-state nonlinear branching processes with large jumps

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摘要: Continuous-state branching processes (CSBPs) with nonlinear branching mechanism can be obtained from spectrally positive Levy processes by generalized Lamperti time changes. These generalized CSBPs allow rich asymptotic behaviours such as extinction, explosion and coming down from infinity. The explosion behaviours for nonlinear CSBPs have been studied in Li and Zhou (2021) when the big jumps of the process have a finite first moment. In this talk we further consider the explosion behaviours for such processes with jumps of infinite first moment. In particular, we identify the speed of explosion when the associated Laplace exponent and rate function are both regularly varying. This talk is based on joint work with Bo Li and Clement Foucart.

个人简介: 周晓文教授，在美国加州大学伯克利分校 (University of California at Berkeley) 获统计学博士学位。现任加拿大康考迪亚大学 (Concordia University) 数学与统计系终身教授。长期从事概率论与随机过程理论的研究，主要研究兴趣包括测度值随机过程，Levy过程及其在种群遗传学和风险理论中的应用。先后在AOP, PTRF, AAP等国际顶级概率刊物发表论文80余篇。

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