概率论系列报告

报告题目（Title）：Asymptotic behavior of critical irreducible multi-type continuous state and continuous time branching processes with immigration

报告人（Speaker）：Gyula Pap　　University of Szeged　(匈牙利)

时间（Time）：5 月 23 日(周一)下午 4:00-5:00

地点（Venue）：北京大学理科一号楼 1493

摘要（Abstract）：Under natural assumptions a Feller type diffusion approximation is derived for critical, irreducible multi-type continuous state and continuous time branching processes with immigration. Namely, it is proved that a sequence of appropriately scaled random step functions formed from a critical, irreducible multi-type continuous state and continuous time branching process with immigration converges weakly towards a squared Bessel process supported by a ray determined by the Perron vector of a matrix related to the branching mechanism of the branching process in question.

It is a common method for proving weak convergence of a sequence of time-homogeneous Markov processes towards a time-homogeneous Markov process first to show convergence of the corresponding infinitesimal generators and then to check some additional conditions. We point out that the sequence of infinitesimal generators of the above mentioned scaled random step functions does not converge.

References

[1] M. Barczy, G. Pap: Asymptotic behavior of critical irreducible multi-type continuous state and continuous time branching processes with immigration, 2014.　ArXiv 1404.2242

[2] M. Barczy, G. Pap: Non-convergence of infinitesimal generators of a convergent　sequence of certain Markov processes with Markov limit process, 2014.　ArXiv 1404.3658

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