Asymptotic normality of Crump-Mode-Jagers processes

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Abstract

Crump-Mode-Jagers processes are a general class of branching models that generalize the well-known Bienaymé-Galton-Watson processes. They allow arbitrary point processes to dictate an individual's reproduction and replace the simple counting of living individuals with the sum of copies of an arbitrary random process-called a "characteristic"-over all individuals.
In this talk, we present an extension of the recent central limit theorem by Iksanov, Kolesko, and Meiners (2024) to characteristics that depend on individuals and their descendants up to a fixed generation. This extension allows for the examination of more structural properties of the processes, with fringe trees serving as our primary motivating example.

This is joint work with Harlan Connor.

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