CONTINUOUS-STATE BRANCHING PROCESSES, EXTREMAL PROCESSES AND SUPER-INDIVIDUALS

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Abstract: The long-term behaviors of flows of continuous-state branching processes are characterized through subordinators and extremal processes. The extremal processes arise in the case of supercritical processes with infinite mean and of subcritical processes with infinite variation. The jumps of these extremal processes are interpreted as specific initial individuals whose progenies overwhelm the population. These individuals, which correspond to the records of a certain Poisson point process embedded in the flow, are called super-individuals. They radically increase the growth rate to $+\infty$ in the supercritical case, and slow down the rate of extinction in the subcritical one. This is a joint work with Clément Foucart.