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Time scales in some large population birth and death processes, quasi stationary distribution and resilience.

mardi 9 avril 2019 15:50 (50 minutes)

With S.Meleard and J.-R.Chazottes we consider a birth and death process with one or several species depending on a (large) parameter giving the scale of the populations sizes. Assuming there is a unique globally attracting nontrivial fixed point for the rescaled infinite population dynamical system, we investigate (under some hypothesis) the time scale of global extinction and the existence and time scale of convergence to a quasi stationary distribution (q.s.d.). Together with S.Martinez we apply these results using micro-macro relations to recover the engineering resilience from the fluctuations of a sample of the process.

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