

ON EXCEPTIONAL TIMES OF FLEMING-VIOT PROCESSES WITH MUTATION

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It is known since a work of Byron Schmuland that there exist exceptional times at which a population evolving according to a standard Fleming-Viot process with constant mutation rate θ has only finitely many types if and only if $\theta < 2$. We prove that if the population dynamic is that of generalized Beta-Fleming-Viot processes with index $\alpha \in (1, 2)$ then

$$P(\exists t > 0 : \#\{\text{types at time } t\} < \infty) = 0$$

as soon as $\theta > 0$. Along the proof we introduce a measure-valued branching process with non-Lipschitz interactive immigration via which a Pitman-Yor representation allows us to deduce the result from classical covering result for Poisson point.

(Joint work with J. Berestycki, L. Döring, L. Mytnik)