

Modelling populations expanding in a spatial continuum

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Understanding the emergence of genetic diversity patterns in expanding populations is of longstanding interest in probability, population genetics and biophysics. In this talk, I will introduce a model that can be used to gain some insight on the evolution of genetic diversity patterns at the front edge of an expanding population. This model, called the ∞ -parent Spatial Λ -Fleming Viot process (or ∞ -parent SLFV), can be considered as the limit of a branching process with density-dependance, and is characterized by an “event-based” reproduction dynamics. I will present what is currently known of the growth properties of this process, and what are the implications of these results in terms of genetic diversity at the front edge.

Based on a joint work with Amandine Véber (MAP5, Univ. Paris Cité) and Matt Roberts (Univ. Bath).

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