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Some Support Properties of Λ-Fleming-Viot Processes with Brownian Spatial Motion

A Fleming-Viot process is a probability-measure-valued stochastic process for mathematical population genetics. It describes the evolution of relative frequencies for different types of alleles in a large population that undergoes reproduction and mutation.

In this talk I first briefly review the Λ-coalescent of multiple collisions and the lookdown representation of Donnelly and Kurtz for Λ-Fleming-Viot process with Brownian spatial motion. I then present several support properties obtained in [1,2,3] on the Λ-Fleming-Viot random measure. These properties include the compact support property, the modulus of continuity, Hausdorff dimensions and the disconnectedness. The lookdown representation is crucial in showing all these results. If time allows I will also introduce some recent work in progress.

References

[1] H. Liu and X. Zhou (2012). Compact support property of the Λ-Fleming-Viot process with underlying Brownian motion. *Electronic Journal of Probability*, *17*, No. 73, 1-20.

[2] H. Liu and X. Zhou (2013). Some support properties for a class of Λ-Fleming-Viot processes. To appear. *Annales de L'Institut Henri Poincaré (B) Probabilités et Statistiques*. Available at http://arxiv.org/abs/1307.3990.

[3] X. Zhou (2014). On criteria of disconnectedness for Λ-Fleming-Viot support. *Electronic Communications in Probability*, *19*, No 53, 1-16.