



Seminar/Talk

# Branching random walk with non-local competition

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Host: M. Beiglböck, N. Berestycki, L. Erdős, J. Maas, F. Toninelli, E. Schertzer

We study a particle system in which particles reproduce, move randomly in space, and compete with each other. We prove global survival as well as a shape theorem describing the asymptotic spread of the population, when the population density is sufficiently large. In contrast to most previous work, we allow the competition kernel to have an arbitrary, or even infinite range, whence the term 'non-local competition'. This makes the particle system non-monotone and of infinite-range dependence, meaning that the usual comparison arguments break down and have to be replaced by a more hands-on approach. Based on joint work with Pascal Maillard.

**Wednesday, January 25, 2023 04:45pm - 05:40pm**

Mondi 2, I01.01.008, Central Building



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