Mathematics and CS Seminar

Brownian bees in the infinite swarm limit

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The "Brownian bees" model is a particle system in $\R^d$ in which particles move independently as Brownian motions, branch at rate one and the total population size is kept constant equal to N by removing the particle with maximum distance to the origin at each branching event. This type of spatial branching process with selection and its variants (such as the N-BBM) are simple models for the evolution of populations under selection. In this talk, I'll show how the large scale behaviour of these systems is given by the solutions of certain Free-boundary problems and how this can (or can't) be used to understand their large time behaviour.This is based on joint works in progress with E. Brunet, J. Nolen and S. Penington.

Tuesday, January 7, 2020 04:30pm - 05:30pm
Heinzel Seminar Room / Office Bldg West (I21.EG.101)

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