

Collège de France-Tokyo College

Joint Lectures by Prof. Bernard DERRIDA

2019 **10.23** (Wed) - **24** (Thu)

10:00-11:30 am

Rm. 340, 3F., Faculty of Science Bldg.
No.1 (East), The University of Tokyo
(Hongo Campus)

Bernard Derrida



Bernard Derrida is a Professor at the Collège de France holding the Chair in Statistical Physics. He also teaches at the Pierre-et-Marie-Curie University and the École Normale Supérieure. An expert in statistical mechanics, he adapted statistical-physics ideas to various problems in biology, and is the Derrida plots is named after him.

“Reaction diffusion problems: from moving interfaces to genealogies I & II”

Reaction diffusion problems appear in a large number of contexts such as branching Brownian motions, growing domains or evolving populations under selection. These two lectures will focus on the properties of travelling waves or invading fronts generated by simple reaction diffusion models. After a short introduction to the many faces (growth models, branching Brownian motion, disordered systems) of the Fisher-KPP equation the first lecture will review some of its best known properties as well as some more recent aspects. Coalescents, in particular the Kingman model which describes the genealogy of an evolving neutral population, will be briefly reviewed at the beginning of the second lecture. Then the second lecture will present simple models of evolution related to the noisy Fisher-KPP equation, and discuss how selection affects the statistical properties of genealogies. Along these two lectures, some unsolved questions will also be mentioned.

Pre-registration Required : <https://bit.ly/2oIDHLA> (80 seats - First come, first served)
Language: English (NO simultaneous translation available)



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