

# Séminaire de Probabilités et Statistique

Jeudi 08 Février 2024 à 14h00

Salle de réunion Fizeau

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*A few scaling limits results for the facilitated exclusion process  
in 1d .*

The aim of this talk is to present some recent results which have been obtained for the facilitated exclusion process in one dimension. This stochastic lattice gas is subject to strong kinetic constraints which create a continuous phase transition to an absorbing state at a critical value of the particle density. If the microscopic dynamics is symmetric, its macroscopic behavior, under periodic boundary conditions and diffusive time scaling, is ruled by a non-linear PDE belonging to free boundary problems (or Stefan problems). One of the ingredients is to show that the system typically reaches an ergodic component in subdiffusive time. The asymmetric case can also be fully treated: in this case, considered on the infinite line, the empirical density converges to the unique entropy solution to a hyperbolic Stefan problem. All these results rely, to various extent, on a mapping argument with a zero-range process, which completely fails in dimension higher than 1.

Based on joint works with O. Blondel, C. Erignoux, M. Sasada and L. Zhao.