

Reducing exit-times of diffusions with repulsive interactions

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Résumé

I will present a Kramers' type law for the low-temperature behavior of the exit-times from a metastable state for a class of self-interacting nonlinear diffusion processes. Contrary to previous works, the interaction is not assumed to be convex, which means that this result covers cases where the exit-time for the interacting process is smaller than the exit-time for the associated non-interacting process. The proof is based on a probabilistic coupling argument between the non-linear process and a linear process where the interacting law is replaced by a constant Dirac mass at the fixed point of the deterministic zero-temperature process. This is a joint work with Paul-Eric Chaudru de Raynal, Hong Duong, Milica Tomašević and Julian Tugaut.