

ERGODICITY AND ASYMPTOTIC LIMITS FOR (RELATIVISTIC) LANGEVIN DYNAMICS

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We consider systems of interacting particles governed by the generalized/relativistic Langevin dynamics in the presence of singular repulsive interacting forces. For each system, we establish a rate of convergence toward the unique invariant probability measure, which relies on novel construction of Lyapunov functions. We also study asymptotic limits of these systems when passing to the limit the interested parameters (the small-mass limit and Newtonian limit, respectively).

This talk is based on joint works with H. D. Nguyen (University of Tennessee).