

EXPONENTIAL RATE OF CONVERGENCE INDEPENDENT OF THE  
DIMENSION IN A MEAN-FIELD SYSTEM OF PARTICLES

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*Abstract:* This article deals with a mean-field model. We consider a large number of particles interacting through their empirical law. We know that there is a unique invariant probability for this diffusion. We look at functional inequalities. In particular, we briefly show that the diffusion satisfies a Poincaré inequality. Then, we establish a so-called  $WJ$ -inequality, which is independent of the number of particles.

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