

Particle Approximation of the Wasserstein Diffusion

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Abstract.

In this talk we present a finite dimensional approximation of the recently constructed Wasserstein diffusion, taking values in the set of probability measures on the unit interval. More precisely, the empirical measure process associated to a system of interacting two-sided Bessel processes with dimension $0 < \delta < 1$ converges in distribution to the Wasserstein diffusion under the equilibrium fluctuation scaling. In analogy to Bessel processes the approximating system admits the Feller property, but it is not a semimartingale. The passage to the limit is based on Mosco convergence of the associated Dirichlet forms in the generalized sense of Kuwae/Shioya. This is joint work with Max von Renesse.