PARTICLE APPROXIMATION TO THE WASSERSTEIN DIFFUSION

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Abstract: We present a system of interacting Brownian particles on the real line for which the empirical distributions C in the scaling limit of large particle numbers C converge to the Wasserstein diffusion. The latter is a reversible Markov process with continuous paths on the space of probability measures whose square field operator C which governs the short time behavior C is the squared norm of the Wasserstein gradient. We indicate also some extensions to higher dimensional spaces.