

Contractivity w.r.t. Kantorovich distances for diffusion processes in high dimensions

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Abstract:

We consider contractivity for diffusion semigroups and transition kernels of Markov chains w.r.t. Kantorovich (L^1 Wasserstein) distances based on appropriately chosen concave functions. The focus is on the derivation of contraction rates that do not depend on the dimension. Applications include overdamped Langevin diffusions with locally non-convex potentials, products of these processes, and systems of weakly interacting diffusions. In the latter case, proofs are based on a componentwise reflection coupling.