

Stability estimates for invariant measures of diffusion processes, with applications to stability of moment measures and Stein kernels

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Abstract. We investigate stability of invariant measures of diffusion processes with respect to L^p distances on the coefficients, under an assumption of log-concavity. The method is a variant of a technique introduced by Crippa and De Lellis to study transport equations. As an application, we prove a partial extension of an inequality of Ledoux, Nourdin and Peccati relating transport distances and Stein discrepancies to a non-Gaussian setting via the moment map construction of Stein kernels.

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