

# Accelerating Diffusions on Torus

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**Abstract** — By viewing diffusion processes as conceptual algorithms, its distributions can be regarded as approximations to the equilibrium. We are interested in comparing the algorithms. With spectral gap as the comparison criterion, it is already known that by adding a weighted divergence free drift to a reversible diffusion does improve the performance. However, how good we can make the improvement by this method is not yet answered. In this talk, we consider a reversible diffusion on torus and observe the variations of spectral gap with different divergence free drifts added.

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