

LARGE DEVIATIONS AND GRADIENT FLOW

STEFAN ADAMS

We outline recent work uncovering intriguing connections between Otto's characterisation of diffusion as entropic gradient flow on one hand and large-deviation principles describing the microscopic picture (Brownian motion) on the other. Specifically, we connect macroscopic gradient flows with large deviation principles, and point out the potential of a bigger picture emerging: we indicate that in some non-equilibrium situations, entropies and thermodynamic free energies can be derived via large deviation principles. The approach advocated in the talk is different from the established hydrodynamic limit passage but extends a link that is well known in the equilibrium situation.