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LARGE DEVIATIONS OF INVARIANT MEASURES FOR DEGENERATE DIFFUSIONS

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Abstract: In this note we study large deviations of invariant measures for stable dynamical systems under small noise perturbations of white noise type. The systems are modelled by diffusion equations with a diffusion term $\varepsilon\sigma(x_t)$, which we allow to be degenerated. The corresponding invariant measures converge to a measure concentrated at the stable point and their logarithms are compared with the optimal values of linear deterministic control problems with quadratic functionals.

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