

Quantitative analysis of metastability in
reversible diffusion processes via a Witten
Laplacian approach
(after Helffer–Klein–Nier and Helffer–Nier)

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Abstract

In this talk, I will present recent results improving and extending a previous paper by Bovier–Gayraud–Klein devoted to the case of \mathbb{R}^n . Our aim is to analyze the compact case and the case with boundary. Using techniques developed in the approach of Helffer–Sjostrand of the Witten complex, and after introduction of a Witten cohomology complex adapted to the case with boundary, we give a very accurate asymptotics for the exponentially small eigenvalues. In particular, we analyze the effect of the boundary in the asymptotics.