

Singularities in PDE and the calculus of variations

Singularités en EDP et dans le calcul des variations

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Concentration phenomena for a class of singularly perturbed elliptic equations

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Abstract

We consider some singularly perturbed PDEs, motivated by the study of the Nonlinear Schroedinger Equation and of some problems arising in chemistry or biology. Although there is a broad literature concerning concentration at points of solutions of these equations, only recently rigorous proofs about concentration at higher-dimensional sets have been given. We discuss some results in this direction, and the new difficulties arising in this context.