



NICE WEAK KAM METHODS IN NICE

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Two approximation methods for the effective Hamiltonian

Abstract

We present a numerical approximation of the effective Hamiltonian based on Hamilton-Jacobi equations of eikonal type in one and two dimensions. The scheme computes the viscosity solution of the cell problem, a degenerate stationary Hamilton-Jacobi equation on a torus, via the solution of the corresponding evolutive problem. In fact, the speed at which such a solution goes to infinity is used to get an approximation of the effective Hamiltonian. We will describe the main features of that approach and compare it with other approximation methods (e.g. min-max formulas, ergodic, variational) in terms of accuracy and computational times. Moreover, hints about the approximation of the Aubry set will be given.