



NICE WEAK KAM METHODS IN NICE

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Qualitative analysis of critical stationary ergodic Hamilton-Jacobi equations

Abstract

We present some results in collaboration with Andrea Davini about Hamilton-Jacobi equations with stationary ergodic Hamiltonians. The key idea of our analysis is to observe that the stationary ergodic structure of the Hamiltonian induces a stochastic geometry in the space of the state variable where the fundamental objects are the random closed stationary sets which, somehow, play the same role as the points in the deterministic case. In this context we give a suitably adapted Lax formula, then we propose a generalization of the notion of Aubry set and establish some existence and nonexistence results for exact and approximate correctors.