ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

9. Ordinary Differential Equations and Dynamical Systems

1991 MS Classification: 58F05

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Lagrangian Graphs, Minimizing Measures and Mañe's Critical Values

Title Lagrangian Graphs, Minimizing Measures and Mañe's Critical Values
Joint work with G. Contreras, G. Paternain and M. Paternain
Section Number: 9 Ordinary Differential Equations and Dynamical Systems
Mathematics Subject Classification:58F05

Abstract:
Let L be a convex superlinear Lagrangian on a closed connected manifold N. We show that the critical value, as defined by Mañé, of the lift of L to a covering of N equals the infimum of the values of k such that the energy level k bounds an exact Lagrangian graph in the cotangent bundle of the covering. Also that if the Lagranian flow of L on the energy level k is Anosov, then k must be bigger than the critical value $c_u(L)$ of the lift of L to the universal covering of N.
Finally we show the existence of weak KAM solutions for coverings of N and we explain the relationship between Fathi's results and Mañé's action potentials.