Mini-course by Prof. Albert Fathi (ENS Lyon)

Title: *Weak KAM theory and viscosity solutions on metric spaces.*

Abstract: Weak KAM theory originally connected Mather theory of Lagrangian Systems with Viscosity Theory of the solutions of the corresponding Hamilton-Jacobi Equation, at least when the Hamiltonian is obtained from a Lagrangian. In such a case the Mañé potential is the minimal action necessary to join two points in arbitrary time. Following an idea of Antonio Siconolfi, we will show that we can recover just from the Mañé potential concepts like Peierls barrier, Aubry sets, viscosity subsolutions and solutions. This allows the theory to apply in the more general framework of compact metric spaces, opening a way to define solutions of the Hamilton-Jacobi equation on general metric spaces and also on spaces of probability measures.

When:

Lecture 1: Friday 22/11/2024,   11:30-13:00
Lecture 2: Monday 25/11/2024, 11:30-13:00
Lecture 3: Tuesday 26/11/2024, 11:30-13:00
Lecture 4: Monday 2/12/2024,   11:30-13:00

Where: Aula Dal Passo, Department of Mathematics, University of Rome Tor Vergata.