

Cyril IMBERT: Effective boundary conditions for Hamilton-Jacobi equations.

It has been known for a long time how to handle boundary conditions for Hamilton-Jacobi equations, even if they can be lost or in competition with the equation (in particular if both the equation and the boundary condition are of order 1). The viscosity solution theory enables one to address this problem by imposing the boundary condition in a weak sense, the so-called viscosity sense. Solutions are then stable and existence follows at once by Perron's method. It is next important to study (possibly strong) uniqueness. We will discuss other questions:

1. What are the boundary conditions that are satisfied in a strong sense, and not in the viscosity sense?
2. If a boundary condition is satisfied in a weak sense, is there a (so-called effective) boundary condition satisfied in a strong sense?

The talk is based on joint works with R. Monneau and V. Nguyen.