1004-35-212   **Bo Su*** (`bosu@iastate.edu`), Department of Mathematics, Iowa State University, Ames, IA 50011. *On the uniqueness and regularity of discontinuous solution of Hamilton-Jacobi equations.* Preliminary report.

Uniqueness in almost everywhere sense is proved for discontinuous solution of Hamilton-Jacobi equation. For locally striclly convex hamiltonian such as $(1 + |\nabla u|^2)^{\frac{1}{2}}$, we show that discontinuous become Lipschitz continuous in finite time. Moreoever, if the Hamiltonian is coercive with a linear growth, the solutions enjoy instantaneous BV regularity. (Received January 24, 2005)