Propagation of singularities for semiconcave solutions of Hamilton-Jacobi equations

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Abstract

Given a semiconcave solution u of an evolutionary Hamilton-Jacobi equation, we are interested in the structure of the singular set of u, i.e. the set of points of non-differentiability of u. We provide conditions on the Hamiltonian that guarantee the propagation of any singularity along the generalized characteristic starting from the point.