

Optimization and Applications Seminar, Fall 2008

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Title: Generalized Lojasiewicz inequality: characterizations and consequences in the asymptotic analysis of gradient systems and in gradient-type algorithms

Abstract.

The classical gradient (Lojasiewicz) inequality, initially established for the class of real analytic functions, has been recently extended to encompass nonsmooth functions enjoying good structural properties (o-minimality). In this lecture, a characterization of this inequality in terms of the asymptotic analysis of the corresponding (sub)gradient system will be provided, shedding light on its further consequences on the algorithmic analysis (proximal algorithm, gradient-type methods) in the convex case.

This talk is mostly based on a joint work with J. Bolte (University of Paris 6), O. Ley (University of Tours) and L. Mazet (CNRS).