I Congresso Brasileiro de
Jovens Pesquisadores em
Matemática Pura e Aplicada

A generalized inexact proximal point method for nonsmooth functions that satisfy Kurdyka Lojasiewicz inequality

Glaydston de Carvalho Bento*

*IME-Universidade Federal de Goiás, Goiânia-GO

Resumo

In this paper, following the ideas presented in Attouch et al. (Math. Program. Ser. A, 137: 91- 129, 2013), we present an inexact version of the proximal point method for nonsmoth functions, whose regularization is given by a generalized perturbation term. More precisely, the new perturbation term is defined as a "curved enough"function of the quasi distance between two successive iterates, that appears to be a nice tool for Behavioral Sciences (Psychology, Economics, Management, Game theory, ...). Our convergence analysis is a extension, of the analysis due to Attouch and Bolte (Math. Program. Ser. B, 116: 5-16, 2009) or, more generally, to Moreno et al. (Optimization, 61:1383-1403, 2012), to an inexact setting of the proximal method which is more suitable from the point of view of applications.