

1023-49-530

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*Asymptotic Convergence Analysis of a New Class of Proximal Point Methods.*

We analyze the asymptotic convergence properties of a class of self-adaptive proximal point methods. Our analysis for the exact proximal point method only requires lower semicontinuity of the cost functional and a new local error bound property for the solution set. This latter property is expressed in term of local function values. For the inexact proximal point method, asymptotic convergence results are obtained without smoothness provided the functional is locally convex. When the functional is twice continuously differentiable, asymptotic convergence results are established without local convexity. (Received September 16, 2006)