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Descent methods for mixed variational inequalities in a Hilbert space

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Abstract

In this paper, properties of merit functions for mixed variational inequalities involving a differentiable cost mapping and a convex nondifferentiable function are considered under a Hilbert space setting, thus extending the previous results in a finite-dimensional space. Moreover, we consider several descent methods for the above problem under various monotonicity assumptions on the cost mapping.

Key words: Mixed variational inequality, D-gap function, descent methods.
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1 Introduction

Let U be a nonempty closed and convex subset of a real Hilbert space H. We set $\langle \cdot, \cdot \rangle$ the inner product on H, and $\| \cdot \|$ its norm. Let $G : H \to H$ be a continuously differentiable mapping, and $f : H \to R$ a convex and continuous

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