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VISCOSITY APPROXIMATION METHOD FOR SOLVING MINIMIZATION PROBLEM AND FIXED POINT PROBLEM FOR NONEXPANSIVE MULTIVALUED MAPPING IN CAT(0) SPACES*

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Abstract

In this paper, we propose and study some viscosity-type proximal point algorithms for approximating a common solution of minimization problem and fixed point problem in a CAT(0) space. Using our algorithms, we prove that the proposed implicit iteration net and sequence both converge strongly to a common solution of minimization problem and fixed point problem for nonexpansive multivalued mappings which is also a unique solution of some variational inequalities. Furthermore, numerical examples of our algorithm are given to show its advantage over existing algorithms in the literature. Our theorems extend and improve some related results in literature.

MSC: 47H09; 47H10; 47J20; 47J20.

keywords: Convex functions, variational inequality problem, minimization problem, nonexpansive multi-valued mappings, viscosity-type proximal point algorithm, CAT(0) spaces.

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