A Viscosity-type Scheme for Optimization Problems in Hadamard Spaces

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Abstract

This article proposes a viscosity-type scheme for approximating a common solution of convex minimization problem, monotone vector field inclusion problem and fixed point problem involving multivalued nonexpansive mapping in the framework of Hadamard spaces. We establish a strong convergence theorem for the sequence generated therefrom to a solution of the problem. Furthermore, we apply our results to compute the Fréchet mean, find the mean of probabilities, minimize energy of measurable mappings and solve a problem of two-arm robotic motion control. Finally, we give a numerical example to demonstrate the applicability of the method and also issue comparisons with some existing methods. Our results extend and complement some recent results in the literature.

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