

# Common solutions to a finite family of inclusion problems and an infinite family of fixed point problems by a generalized viscosity implicit scheme including applications

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## Abstract

This manuscript deals with two problems: the first one is a variational inclusion problem involving an  $m$ -accretive mapping and a finite family of inverse strongly accretive mappings, and the other one is a fixed point problem having an infinite family of strict pseudo-contraction mappings in Banach spaces. To approximate the common solution of these problems, we design a generalized viscosity implicit iterative scheme with Meir–Keeler contraction. A strong convergence result for the proposed iterative scheme is established. Applications based on convex minimization problem, linear inverse problem, variational inequality problem and equilibrium problem are derived from the main result. The numerical applicability of the main result and some applications are demonstrated by three examples. Our result extends, generalizes and unifies the previously known results given in literature.

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