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Split Monotone Inclusion and Fixed Point Problems in Real Hilbert Spaces

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Abstract : The convergence analysis of split monotone inclusion problems and fixed point problems of certain nonlinear mappings are investigated in the setting of real Hilbert spaces. Inertial extrapolation term in the spirit of Polyak is incorporated to speed up the rate of convergence. Under standard assumptions, a strong convergence of the proposed algorithm is established without computing the resolvent operator or involving Yosida approximation method. The stepsize involved in the algorithm does not depend on the spectral radius of the linear operator. Furthermore, applications of the proposed algorithm in solving some related optimization problems are also considered. Our result complements and extends numerous results in the literature.

Keywords : fixedpoint, hilbertspace, monotonemapping, resolventoperators
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