

A THREE-OPERATOR SPLITTING ALGORITHM FOR NULL-POINT PROBLEMS

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Abstract. The aim of this paper is to present and investigate the asymptotic behavior of a novel splitting algorithm for solving a class of null-point problems governed by three maximal monotone operators. Two of which are assumed to be proximable and one verified a cocoercive property. The proposed algorithm is based on a duality principle and the convergence proofs rely on classical arguments of nonlinear analysis and properties of the resolvent mappings of maximal monotone operators. The convex optimization case is also addressed with its related algorithm and convergence result.

Key Words and Phrases: Maximal monotone operators, splitting algorithms, Yosida approximate operator, cocoercivity, strong monotonicity, convex minimization, conjugate function.

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