Coupling Popov's algorithm with subgradient extragradient method for solving equilibrium problems

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Abstract

Based on the recent works by Censor et al. (2011), Malitsky and Semenov (2014), and Hieu (2016), we propose a new scheme for solving pseudomonotone equilibrium problems in real Hilbert spaces. Weak and strong convergence results are suitably established. Our algorithm improves the recent one announced by Hieu not only from computational point of view, but also in some assumptions imposed on his main result. A comparative numerical study is carried out between three algorithms (the algorithms of Quoc-Muu-Hien (2008), Vedel-Semenov (2015) and Hieu (2016)) and the new one. Experimental results show that our algorithm is more efficient than the previous ones.