An extension of the Jacobi algorithm for the complementarity problem in the presence of multivalence

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Abstract

The complementarity problem is examined in the case where the basic mapping is the sum of a finite number of superpositions of a univalent off-diagonal antitone mapping and a multivalent diagonal monotone one. An extension is proposed for the Jacobi algorithm, which constructs a sequence converging to a point solution. With the use of this property, the existence of a solution to the original problem is also established. Under certain additional conditions, the minimal element in the feasible set of this problem is one of its solutions. Copyright © 2005 by MAIK "Nauka/Interperiodica".

Keywords

Complementarity problem, Existence of solution, Multivalent mapping, Off-diagonal antitonicity, The Jacobi algorithm