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Gauss-Seidel method for multi-valued inclusions with Z mappings

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Abstract

We consider a problem of solution of a multi-valued inclusion on a cone segment. In the case where the underlying mapping possesses Z type properties we suggest an extension of Gauss-Seidel algorithms from nonlinear equations. We prove convergence of a modified double iteration process under rather mild additional assumptions. Some results of numerical experiments are also presented. © 2011 Springer Science+Business Media, LLC.

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Keywords

Gauss-Seidel algorithm, Multi-valued inclusions, Weak Z-mappings