USING EXTRAPOLATION FOR THE SOLUTION OF THE LINEAR COMPLEMENTARITY PROBLEM

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Abstract

The Linear Complementarity Problem (LCP) has many applications as, e.g., in the solution of Linear and Convex Quadratic Programming, in Free Boundary Value problems of Fluid Mechanics, etc. In the present work we consider the case where the matrix coefficient $A \in \mathbb{R}^{n,n}$ of LCP is a positive stable matrix. Considering a known iterative method for the solution of LCP we introduce the principle of Extrapolation and find the best extrapolation parameter ω for which the corresponding extrapolated iterative scheme converges asymptotically faster. Various simple and more complicated numerical examples show that it is worth using extrapolation to solve an LCP.

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