On an Iterative Algorithm for $H$–Matrices

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Abstract

$H$–matrices are very important in the convergence of the classical iterative methods. So, many works have appeared that propose criteria to determine whether a certain matrix $A$ is an $H$–matrix. Based on previous and new ideas we propose a new iterative algorithm for irreducible matrices that decides about the $H$– or non $H$–matrix character of a certain matrix in a finite number of steps. Numerical examples are presented to support our theory.