

# H-MATRIX THEORY AND ITS APPLICATIONS

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## Abstract

The most important property of the class of H-matrices, in the sense of applications presented here, is the following: every H-matrix can be diagonally scaled into a strictly diagonally dominant form. When the scaling matrix is chosen to be a diagonal matrix of the special form, we are able to characterize the corresponding subclass of H-matrices by relatively simple conditions. Precisely this fact allows us to improve known results in several different linear algebra fields: eigenvalue localization, bounds of determinants, Perron root estimates, or convergence of some relaxation methods. The aim of the talk is to present general idea of this approach.

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## References

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