187-201

A CLASS OF SCALED DIRECT METHODS
FOR LINEAR SYSTEMS*

JOZSEF ABAFFY[1] AND EMILIO SPEDICATO[2]

[1]*University of Economics, Budapest, Hungary*
[2]*Istituto Universitario di Bergamo, Dipartimento di Matematica, Statistica,
Informatica ed Applicazioni, Bergamo, Italy*

Abstract. A generalization of the class of direct methods for linear systems recently introduced by Abaffy, Broyden and Spedicato is obtained by applying these algorithms to a scaled system. The resulting class contains an essentially free parameter at each step, giving a unified approach to finitely terminating methods for linear systems. Various properties of the generalized class are presented. Particular attention is paid to the subclasses that contain the classic Hestenes-Stiefel method and the Hegedus-Bodocs biorthogonalization methods.

Key words and phrases: Linear systems, direct methods, scaling of equations, conjugate direction methods, biorthogonalization methods.