Santos, Newton R.

Applying the JII, JII-SI, and CG methods to two classes of linear problems. (English) Zbl 0745.65026


This paper develops a Chebyshev semiiterative method, which is based on the optimum Jacobi second-degree iterative method. Two classes of systems are treated by the method developed. The first one is the class of consistently ordered matrices in the sense of Young. The second one is a class of symmetric matrices with 1 on the main diagonal and a constant \( q \) (between 0 and 1) elsewhere.

The method developed and the optimum Jacobi second degree one are compared with the conjugate gradient method by applying them to the two classes of systems mentioned above. The paper ends with a number of interesting remarks about the methods mentioned above.

Reviewer: J.P.Zubelli (Santa Cruz)

MSC:

65F10 Iterative numerical methods for linear systems

Keywords:

comparison of methods; Chebyshev semiiterative method; optimum Jacobi second-degree iterative method; consistently ordered matrices; symmetric matrices; conjugate gradient method

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References:


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