

## عنوان مقاله:

Convergence Rate of GMRES on Tridiagonal Toeplitz Linear System

## محل انتشار:

کنفرانس بین المللی علوم و مهندسی (سال: 1394)

تعداد صفحات اصل مقاله: 32

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## خلاصه مقاله:

This paper aimed to review paper [01] titled The rate of convergence of GMRES on a tridiagonal toeplitz linear system II by Ren-cang Li & Wei Zhang and its references, in which linear system  $Ax=b$  is solved using Toeplitz matrices by generalized minimal residual method. Based on this thesis, this method is the best and most complete way to solve asymmetric matrices. Since the analysis of the convergence of such systems is difficult and complex, 2nd order orthogonal Chebyshev polynomials have been used to obtain more accurate limits and expressions for residual. In this thesis, convergence rate of GMRES was increased for linear toeplitz matrices using certain formulas. Simpler and faster bounds will be provided for linear system of  $Ax=b$  while all entries of  $A$  except for first and last ones are zero. Further, comparison of this method with others will show its superiority. While providing different methods, they will be compared. In the end, algorithm of the above method was implemented using MATLAB software and in section on numerical results, diagrams of convergence rate and eigenvalues matrix were provided. By comparing them, a logical and experimental relation between convergence rate and eigenvalue will be obtained. Toeplitz systems We want to study toeplitz linear matrix equation system, which is type of band matrices. First, we provide a series of preliminary definitions.

## کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

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