Notes on GMRES Algorithm Organization

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Abstract

The Generalized Minimum Residual (GMRES) iterative method and variations of it are frequently used for solving systems of linear equations of the form $Ax = b$, where $A$ is a large sparse nonsingular nonsymmetric matrix. We discuss ways to reorganize the algorithm to improve its efficiency. See www.cs.utexas.edu/users/kincaid/GMRES/

Key words: Generalized Minimum Residual (GMRES) iterative method, Preconditioned GMRES($m$) Algorithm, solving large sparse systems of linear equations, GMRES algorithm reorganization and Matlab code.

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