Ron Morgan

GMRES-DR with Weighting

Department of Mathematics
Baylor University
Waco,TX 76798-7328
Ronald_Morgan@baylor.edu

GMRES-DR is a restarted Krylov method that both solves linear equations and computes eigenvalues and eigenvectors. We apply a weighted inner-product to GMRES-DR and show that it can improve convergence. We also attempt to explain why weighting is beneficial to both GMRES and GMRES-DR. We also look at weighting for restarted Arnoldi and at solving linear equations with multiple right-hand sides.