ITERATIVE METHODS FOR SYMMETRIC QUASI-DEFINITE LINEAR SYSTEMS

Mario Arioli

RAL STFC Rutherford Appleton Lab, Chilton, Didcot, United Kingdom
e-mail: `mario.arioli@stfc.ac.uk`

Joint work with Dominique Orban

Abstract

We propose generalized versions of LSQR, Craig and LSMR well suited to the solution of symmetric quasi-definite systems of equations such as those arising in regularized interior-point methods for convex optimization or in stabilized control problems. Those methods essentially operate on the normal equations. We establish a connection between the iterates that they generate and those generated by CG and MINRES on the original system.