Nicole Spillane (pas Jeudi après midi)

CNRS, Ecole polytechnique

Solving linear systems by GMRES with preconditioning, weighting and deflation

GMRES is one of the go-to solvers for large scale linear systems. As all iterative solvers, GMRES can suffer from slow convergence. The purpose of this work is to:
- prove GMRES convergence bounds in which the role of the preconditioner, weight and deflation operator is explicit,
- make particular choices of these accelerators for GMRES based on these bounds.
Particular focus will be on Hermitian positive definite preconditioners for some non-Hermitian problems.