

ADAPTIVE REGULARIZATION PARAMETER CHOICE RULES FOR LARGE-SCALE PROBLEMS

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This talk introduces a new class of adaptive regularization parameter choice strategies that can be efficiently applied when regularizing large-scale linear inverse problems using a combination of projection onto Krylov subspaces and Tikhonov regularization, and that can be regarded as special instances of bilevel optimization methods. The links between Gauss quadrature and Golub-Kahan bidiagonalization are exploited to prove convergence results for some of the considered approaches, and numerical tests are shown to give insight.