Regularization by preconditioning

C. Estatico

Dipartimento di Matematica e Informatica, Università degli Studi di Cagliari (estatico@unica.it)

In this talk, we discuss some preconditioning techniques for the regularization of ill-posed problems. In particular, we first identify a set of approximation processes which regularizes the inversion of real functions. Then, such processes are used as a basic tool for the computation of preconditioners endowed with regularizing properties. We show that these preconditioners provide fast convergence and noise control of iterative methods for discrete ill-posed and structured linear systems.

The regularization properties of the preconditioning techniques are assessed by means of several image deblurring numerical tests.

Bibliography


