A PROJECTION STRATEGY FOR CHOOSING THE REGULARIZATION PARAMETER OF THE ITERATED TIKHONOV METHOD IN BANACH SPACES

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We analyze a strategy for choosing the regularization parameter of the iterated Tikhonov method in Banach spaces. In this version, the regulatization term of Tikhonov's functional consists in the Bregman distance induced by a convex functional. Using only available information, such as the noise level, the forward operator and the noisy data, we successively generate closed convex sets and then project the current iterate on it, in order to find a new iterate. Under standard assumptions, we prove convergence, stability and regularization properties of the generated sequence.

This is joint work with M. Pentón and A. Leitão.