

Projective iterative methods for solving ill-posed problems under the tangential cone condition

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Abstract:

In this talk projective versions of the Landweber (LW) and Levenberg-Marquardt (LM) iterative methods are considered for solving ill-posed problems modeled by nonlinear operators acting between Hilbert spaces.

First we use the *Tangential Cone Condition* to generate adequate convex sets with a special separation property w.r.t. the set of exact solutions. Then we propose and analyze iterative methods (based on successive projections on these convex sets). These new methods can be seen as projective versions of the LW method (PLM) and the LM method (PLW).

Convergence analysis results are established for these methods, namely monotonicity, convergence, stability and semi-convergence properties. Moreover, numerical experiments are presented for a Calderon type problem.