

## A POSTERIORI AND A PRIORI ERROR ESTIMATES FOR SOLUTIONS OF ILL-POSED PROBLEMS <sup>1</sup>

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In order to calculate a priori or a posteriori error estimates for solutions of an ill-posed operator equation with an injective operator we need to describe a set of approximate solutions that contains an exact solution. After that we have to calculate a diameter of this set or maximal distance from a fixed approximate solution to any element of this set.

We will describe three approaches for constructing error estimates and also their practical applications.

1) Error estimates for quasisolutions on a given compact set [1,2]. This method can be generalized for inverse problems on Banach lattices [3].

2) A posteriori error estimates in the method of extending compacts [2,4]. This method can be generalized for nonlinear ill-posed problems [5]. Using the Lagrange principle optimal a posteriori error estimates can be constructed [6,7].

3) Extra-optimal regularizing algorithms proposed by A.S. Leonov [8].

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