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## ONE APPROACH TO THE COMPARISON OF ERROR BOUNDS AT A POINT AND ON A SET IN THE SOLUTION OF ILL-POSED PROBLEMS

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The approximate solution of ill-posed problems by the regularization method always involves the issue of evaluating the error. It is a common practice to use uniform bounds on the whole class of well-posedness in terms of the modulus of continuity of the inverse operator on this class. Local error bounds, which are also called error bounds at a point, have been studied much less. Since the solution of a real-life ill-posed problem is unique, an error bound obtained on the whole class of well-posedness roughens to a great extent the true error bound. In the present paper we study the difference between error bounds on the class of well-posedness and error bounds at a point for a special class of ill-posed problems. Assuming that the exact solution is a piecewise smooth function, we prove that an error bound at a point is infinitely smaller than the exact bound on the class of well-posedness.

Keywords: ill-posed problem, regularization, evaluation of the error at a point, evaluation of the error on a set.

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