

A few theorems on the solvability in usual Hölder
and Sobolev spaces for elliptic and parabolic
equations with growing first-order coefficients

Nicolai Krylov, University of Minnesota
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Abstract: One usually considers weighted Sobolev or Hölder spaces while dealing with second-order elliptic and parabolic equations with growing coefficients. Quite surprisingly, if the equations are uniformly nondegenerate and have bounded second and zeroth order coefficients, then without introducing any weights one can prove the solvability in usual Hölder and Sobolev spaces if the drift coefficients grow linearly with respect to the spatial variable. (The problems are considered in the whole space.)