

Hölder estimates for non-autonomous parabolic problems with rough data and applications to quasilinear problems

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We consider non-autonomous parabolic problems in divergence form, the coefficients being only measurable and bounded in time, with right-hand sides in a negative Sobolev space and complemented by mixed boundary conditions. The underlying domain is supposed to be a Lipschitz domain, where the conditions on the Dirichlet part are relaxed to allow the domain to touch itself. In this setting, we derive existence of Hölder continuous solutions together with Hölder bounds uniform in the modulus of coercivity and the upper bound of the coefficient function. In their essence, these results go back to the classical work of Ladyshenskaya et al.. We use them further to show global existence and uniqueness of solutions to quasilinear parabolic problems in divergence-form under additional assumptions.