

Elliptic and parabolic second-order PDEs with growing coefficients

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Abstract

We consider a second-order parabolic equation in \mathbf{R}^{d+1} with possibly unbounded lower order coefficients. All coefficients are assumed to be only measurable in the time variable and locally Hölder continuous in the space variables. We show that global Schauder estimates hold even in this case. The proof introduces a new localization procedure. Our results show that the constant appearing in the classical Schauder estimates is in fact independent of the L_∞ -norms of the lower order coefficients. We also give a proof of uniqueness which is of independent interest even in the case of bounded coefficients. This is a joint work with N. V. Krylov.