

Dirichlet and Neumann problems for parabolic non-divergence equations with main coefficients measurable in time

Nazarov A. I.

(St. Petersburg Dept of Steklov Institute
and St. Petersburg State University)

We consider the Dirichlet problem for non-divergence parabolic equation with discontinuous in t coefficients in a half-space and in a wedge. The main result is weighted coercive estimates of solutions in anisotropic Sobolev spaces. We give an application of these results to linear and quasi-linear parabolic equations in a bounded domain. Here we consider the case of $C^{1,\delta}$ -boundary, $\delta \in [0, 1]$, as well as the case of domain with an edge or with a conical point.

Similar results are obtained for the oblique derivative problem.

The talk is based on joint papers with Vladimir Kozlov [1-4].

References

1. V.A. Kozlov, A.I. Nazarov, *The Dirichlet problem for non-divergence parabolic equations with discontinuous in time coefficients*, Math. Nachr. **282** (2009), N9, 1220-1241.
2. _____, *The Dirichlet problem for non-divergence parabolic equations with discontinuous in time coefficients in a wedge*, Math. Nachr. **287** (2014), N10, 1142-1165.
3. _____, *Oblique derivative problem for non-divergence parabolic equations with time-discontinuous coefficients*, Proc. St. Petersburg Math. Soc. **XV**; AMS Transl. Series **2**. **232** (2014), 177-191.
4. _____, *Oblique derivative problem for non-divergence parabolic equations with discontinuous in time coefficients in a wedge*, J. Math. Anal. Appl., DOI 10.1016/j.jmaa.2015.10.029. 19p.