

L^q theory for generalized Stokes system under perfect slip boundary condition

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We prove an L^q theory result for generalized Stokes system on a bounded $C^{1,1}$ domain complemented with the perfect slip boundary conditions and under Φ -growth conditions. Since the interior regularity was obtained in [2], a regularity up to the boundary is an aim of this paper. In order to get the main result, we use Calderón-Zygmund theory and the method developed in [1]. We obtain higher integrability of the first gradient of a solution.

This is a joint work with Jakub Tichý.

References

- [1] *L. A. Caffarelli, I. Peral*: On $W^{1,p}$ estimates of elliptic equation in divergence form. *Commun. Pure Appl. Math.* 51 (1998), 1–21.
- [2] *L. Diening, P. Kaplický*: L^q theory for a generalized Stokes system. Accepted to *Manuscr. Math.*