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Joseph Feneuil, Svitlana Mayboroda and Zihui Zhao*, zzhao@ias.edu. *Solvability of Dirichlet problem in domains with lower dimensional boundaries.*

We study degenerate elliptic operators in domains with lower dimensional boundaries. To be precise, we consider the complement of a d -dimensional Lipschitz graph in \mathbb{R}^n , with $d < n - 1$, and degenerate elliptic operators with complex coefficients associated to the domain. We show that for any $q > 1$, the corresponding Dirichlet problem is solvable in L^q , provided the Lipschitz constant is sufficiently small and the coefficients satisfy a Carleson measure condition with small constant. This is achieved by comparing the square function and non-tangential maximal function of the solution. (Received January 24, 2019)