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Joseph Feneuil* (jfeneuil@umn.edu), School of Mathematics, University of Minnesota,
Minneapolis, MN 55455. *The Dirichlet problem for sets with higher co-dimensional boundaries.*

Let $\Gamma \subset \mathbb{R}^n$ be a set of dimension $d < n - 1$ and $\Omega = \mathbb{R}^n \setminus \Gamma$ be its complement. We develop an elliptic theory adapted to Ω , where we introduce a new notion of harmonic measure on Γ . When Γ is a special Lipschitz set with small Lipschitz constant, we solve the Dirichlet problem (D_p) for any $p \in (1, +\infty)$. In particular, we prove that the harmonic measure on Γ is A_∞ -absolutely continuous with respect to the d -dimensional Hausdorff measure. This is a joint work with Guy David, Svitlana Mayboroda and Zihui Zhao. (Received February 10, 2018)