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TongKeun Chang* (tchang@ms.uky.edu), Lexington, KY 40506-0027. *Mixed boundary value problem of Laplace equation in bounded Lipschitz domains.*

We study on the existence and uniqueness of the mixed problem for Laplace equation in a bounded Lipschitz domain $\Omega \subset \mathbf{R}^n, n \geq 2$. To show the existence of a solution u , we use layer potentials. We show that if the Neumann data ψ is in $H^{-\frac{1}{2}}(\Gamma_2)$ and the Dirichlet data f is in the Sobolev space $H^{\frac{1}{2}}(\Gamma_1)$, then the mixed boundary problem has a unique solution where $\partial\Omega = \Gamma = \Gamma_1 \cup \bar{\Gamma}_2 = \bar{\Gamma}_1 \cup \Gamma_2, \Gamma_1 \cap \Gamma_2 = \emptyset$. (Received February 10, 2006)