Laura Dawn Croyle* (lauradcroyle@gmail.com), 4161 Victoria Way, Apt 18105, Lexington, KY 40515. \( L^p \) solutions to the mixed boundary value problem in \( C^2 \) domains.

We look at the mixed boundary value problem for the Laplacian in a bounded \( C^2(\mathbb{R}^n) \) domain, given by

\[
\begin{aligned}
-\Delta u &= 0 \quad \text{in } \Omega \\
u &= 0 \quad \text{on } D \\
\frac{\partial u}{\partial \nu} &= g \quad \text{on } N
\end{aligned}
\]  

(MP)

Here, we have a Lipschitz dissection of the boundary given by disjoint sets, \( N \) and \( D \), with Neumann and Dirichlet data respectively. Expanding on work done by Ott and Brown, we find a larger range of values of \( p \), \( 1 < p < \frac{n}{n-1} \), for which the \( L^p \) mixed problem has a unique solution with the non-tangential maximal function of the gradient in \( L^p(\partial \Omega) \). (Received September 13, 2015)