1015-35-183 **Matthew Wright*** (wrightm@math.missouri.edu), 5502 Prairie Rose Ct, Columbia, MO 65202.
Sharp L^p and Hardy space estimates for the Stokes system in Lipschitz domains. Preliminary report.

In 1988, Fabes, Kenig, and Verchota established the well-posedness of the Dirichlet and Neumann problems for the stationary Stokes system, $\Delta\vec{u} = \nabla\pi, \operatorname{div}\vec{u} = 0$, in Lipschitz domains, when the data was taken from L^p, with p near 2. We extend this result to an optimal range of p's for domains in $\mathbb{R}^3$. The emphasis will be on establishing the well-posedness of the Neumann problem with data taken from the atomic Hardy space $H^p, p \leq 1$. In the process, we simultaneously consider Neumann problems associatied with a variety of co-normal derivatives, including the "slip condition." (Received February 04, 2006)