1016-35-98   **Dorina Mitrea*** (`dorina@math.missouri.edu`), 202 Math Sci Bldg, Department of Mathematics, University of Missouri-Columbia, Columbia, MO 65211. *Estimates for Green potentials on Sobolev spaces.*

B.E. Dahlberg has proved optimal L^p-L^q estimates for the solution operator of the Dirichlet Laplacian in a Lipschitz domain. In this talk I shall present a new proof of this result as well as an extension to the case when this Green operator is acting between Sobolev spaces. In addition, the approach we develop, based on SIO's, embeddings, and interpolation, allows for the treatment of other types of boundary conditions (e.g. Neumann) and other elliptic equations. (Received February 06, 2006)