

Operators of p -Laplace Type: Estimates for Solutions Vanishing on Lower Dimensional Sets

by John Lewis

In this talk I will first review work with Kaj Nyström concerning boundary Harnack inequalities, the Martin boundary problem, and boundary regularity for non-negative solutions to equations of p -Laplace type in domains whose boundaries are Lipschitz or sufficiently flat in the sense of Reifenberg. After that I will discuss work in progress with Nyström concerning boundary Harnack inequalities, the Martin boundary problem, and boundary regularity for non-negative solutions to equations of p -Laplace type vanishing on codimension > 1 Reifenberg flat sets in Euclidean n space for certain values of p . The novelty of our work is that more traditional boundary value problems (eg, boundary value problems for the Laplace operator) require that the boundary have a certain fatness in order that a solution exist.