

SPEAKER:

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TITLE:

A reverse Hölder Inequality for weak solutions to the mixed boundary value problem in $C^{1,1}$ domains

ABSTRACT:

We look at the mixed boundary value problem for elliptic operators in a bounded $C^{1,1}(\mathbf{R}^n)$ domain, Ω , given by

$$\left\{ \begin{array}{ll} -\operatorname{div}(a\nabla u) = 0 & \text{in } \Omega \\ u = 0 & \text{on } D \\ \frac{\partial u}{\partial \nu} = g & \text{on } N \end{array} \right. \quad (\text{MP}) \quad \boxed{\text{MP}}$$

The boundary is decomposed into disjoint parts, N and D , with Neumann and Dirichlet data respectively. Assuming N and D give a Lipschitz dissection of the boundary and by following work done by Savaré, we prove a reverse Hölder inequality for weak solutions to (MP) using interpolation theory and difference quotient methods.