

Weighted and pointwise bounds in measure datum problems with applications

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Abstract: Muckenhoupt-Wheeden type bounds and pointwise bounds by Wolff's potentials are obtained for gradients of solutions to a class of quasilinear elliptic equations with measure data. Such results are obtained globally over sufficiently flat domains in \mathbb{R}^n in the sense of Reifenberg. The principal operator here is modeled after the p -Laplacian, where the singular case $1 < p \leq 2 - \frac{1}{n}$ is considered. As an application, sharp existence results are obtained for a class of quasilinear Riccati type equations having a gradient source term with linear or super-linear power growth. This talk is based on joint work with Quoc-Hung Nguyen.