1139-35-382 **Quoc-Hung Nguyen** and **Phuc Cong Nguyen*** (`pcnguyen@math.lsu.edu`).

Muckenhoupt–Wheeden type bounds in quasilinear measure datum problems and their applications.

Weighted Muckenhoupt–Wheeden type bounds are obtained for gradients of solutions to a class of quasilinear elliptic equations with measure data. Such results are obtained globally over C^1 or sufficiently flat domains in $\mathbb{R}^n$. The principal operator here is modeled after the p-Laplacian, where for the first time singular case $\frac{3n-2}{2n-1} < p \leq 2 - \frac{1}{n}$ is considered. Those bounds lead to useful compactness criteria for solution sets of quasilinear elliptic equations with measure data. As an application, sharp existence results and sharp bounds on the size of removable singular sets are deduced for a quasilinear Riccati type equation having a gradient source term with linear or super-linear power growth. This talk is based on joint work with Quoc-Hung Nguyen. (Received February 18, 2018)