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Hölder Continuity of Solutions to the A-Laplace Equation Involving Measures

In joint work with Samia Challal, we show an optimal Hölder continuity for bounded solutions of the equation $-\Delta_A u = \mu$ provided that $\mu\big(B_r(x)\big) \leqslant Cr^{n-1}$ for any ball $B_r(x) \subset \Omega$. The A-Laplace operator is defined by $\Delta_A u = \operatorname{div}\big(\frac{a(|\nabla u|)}{|\nabla u|}\nabla u\big)$, where $A(t) = \int_0^t a(s)\,ds$, a is an increasing C^1 function from $[0,+\infty)$ into $[0,+\infty)$ which satisfies $a(0) = 0$ and

$$a_0 \leqslant \frac{ta'(t)}{a(t)} \leqslant a_1 \quad \forall t > 0, \quad a_0, a_1 \text{ positive constants.}$$