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"Regularity, monotonicity, and symmetry of positive solutions of m-Laplace equations."

ABSTRACT:
We consider the Dirichlet problem for positive solutions of the equation

$$-\Delta_m(u) = f(u) \quad \text{in} \quad \Omega. \tag{0.1}$$

where $\Delta_m(u) = \text{div}\,(|Du|^{m-2}Du)$ and Ω is bounded.

We prove summability properties of $\frac{1}{|Du|}$ and we use the results to get comparison theorems. As an application we prove monotonicity and symmetry properties for the solutions of (0.1).