

# REGULARITY, MONOTONICITY AND SYMMETRY OF POSITIVE SOLUTIONS OF $p$ -LAPLACE EQUATIONS

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ABSTRACT. I will talk about some recent results obtained in collaboration with L. Damascelli. We consider the Dirichlet problem for positive solutions of the equation

$$-\Delta_p(u) = f(u)$$

in a bounded smooth domain  $\Omega$ , with  $f$  locally Lipschitz continuous,  $1 < p < \infty$ . We prove regularity results for the solutions as well as symmetry and monotonicity results.

These results allow us to get a geometric characterization of the critical set  $Z_u$ , where

$$Z_u \equiv \{x \in \Omega \mid Du(x) = 0\}.$$