

Quantitative regularity results for singular and degenerate problems

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Resumo/Abstract:

We will report on three recent developments concerning sharp regularity for singular and degenerate problems: the finding of the precise Hlder exponent for the solutions of the inhomogeneous p -Laplace equation in terms of p , the integrability of the source and the space dimension n (joint work with E. Teixeira); the derivation of a quantitative modulus of continuity, which we conjecture to be optimal, for solutions of the p -degenerate two-phase Stefan problem (joint work with P. Baroni and T. Kuusi); and the proof of the planar counterpart of the longstanding conjecture that solutions of the degenerate p -Poisson equation with a bounded source are locally of class $C^{1,1/p-1}$ (joint work with D. Arajo and E. Teixeira).