SEMINÁRIO DE EQUAÇÕES DIFERENCIAIS

On the Obstacle Problem in Fractional Generalised Orlicz Spaces

José Francisco Rodrigues

CMAFcIO/Ciências/Universidade de Lisboa

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Resumo: We consider the one and the two obstacles problems for the nonlocal nonlinear anisotropic g-Laplacian L_g^s, with $0 < s < 1$ and the associated nonlinear N-function $g = g(x, y, .)$. We prove the strict T-monotonicity of L_g^s and we obtain the Lewy-Stampacchia inequalities. We consider the approximation of the solutions through semilinear problems, for which we prove a global L^∞-estimate, and we extend the local Hölder regularity to the solutions of the obstacle problems in the case of the fractional $p(x, y)$-Laplacian operator. We make further remarks on a few elementary properties of related capacities in the fractional generalized Orlicz framework, with a special reference to the Hilbertian nonlinear case in fractional Sobolev spaces.

Joint work with Catharine W.K. Lo.