Free Boundary Problems in PDEs and Related Issues

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Título: Uniform Lipschitz estimates on the interface for solutions to two-phase free boundary problems governed by non-uniformly elliptic operator.

Resumo: We will deal with a two-phase free boundary problem involving a degenerate non-uniformly elliptic operator with Φ-Laplacian type growth. We prove Lipschitz regularity for minimizers by controlling the negative phase density along the free boundary. It is also shown that the region where the local Lipschitz regularity fails is contained in the contact set between the positive and negative free boundaries and there the negative phase is cusp free. This a joint work with Sergio Henrique Monari (ICMC-USP)