

Monday's Nonstandard Seminar 36

15:00

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Title: **Lipschitz continuity of nonnegative minimizers of functional of Bernoulli type with nonstandard growth**

Abstract: I will report on research done in collaboration with Claudia Lederman from the University of Buenos Aires on the Lipschitz continuity of nonnegative minimizers to functionals

$$J(u) = \int_{\Omega} F(x, u(x), \nabla u(x)) + \lambda(x)\chi_{\{u>0\}} dx.$$

Here $F(x, s, \eta)$ is a function of $p(x)$ -type growth with p Lipschitz continuous, and $0 < \lambda_1 \leq \lambda(x) \leq \lambda_2 < \infty$.

For example, we may take $F(x, s, \eta) = a(x, s)|\eta|^{p(x)} + b(x)|s|^{p^*(x)}$, $b(x) \geq 0$, $0 < a_0 \leq a(x, s) \leq a_1 < \infty$ satisfying some suitable assumptions. Also, $F(x, s, \eta) = G(|\eta|^{p(x)}) + f(x, s)$ with G strictly convex and suitable f . Here, $p^* = \frac{Np(x)}{N-p(x)}$ when $\max_{\Omega} p < N$.