Monday's Nonstandard Seminar

15:00

Author: Michela Eleuteri (University of Modena and Reggio Emilia)

Title: **On the validity of variational inequalities for obstacle problems with non-standard growth**

Abstract: In this talk we will present some recent results in collaboration with Prof. Antonia Passarelli di Napoli concerning the validity of variational inequalities for obstacle problems with non-standard growth. The main idea is to show that the solutions to constrained variational problems with non-standard growth conditions satisfy a corresponding variational inequality without any smallness assumptions on the gap between growth and coercitivity exponents. Our results rely on techniques based on Convex Analysis that consist in establishing duality formulas and point-wise relations between minimizers and corresponding dual maximizers, for suitable approximating problems, that are preserved passing to the limit. In this respect we are able to show that the right class of competitors are the functions with finite energy, in agreement with the unconstrained results.