Monday's Nonstandard Seminar 12

15:00

Author: Erika Maringová (Vienna University of Technology)

Title: **On the globally Lipschitz minimizers to variational problems**

Abstract: Minimization of convex, variational integrals of linear growth is studied among all functions in the Sobolev space $W^{1,1}$ with prescribed boundary values. Due to insufficient compactness properties of these Dirichlet classes, the existence of solutions does not follow in a standard way by the direct method in the calculus of variations and in fact might fail, as it is well-known already for the non-parametric minimal surface problem. Assuming radial structure, we establish a necessary and sufficient condition on the integrand such that the Dirichlet problem is in general solvable, in the sense that a Lipschitz solution exists for any regular domain and all prescribed regular boundary values, via the construction of appropriate barrier functions. Joint works with L. Beck, M. Bulíček, B. Stroffolini and A. Verde.