Vicentiu RADULESCU

University of Craiova, Romania & Institute of Mathematics of the Romanian Academy, Bucharest

Title: Anisotropic problems with multi-phase and mixed regime

Abstract: We consider a class of non-standard PDEs with variable exponent and Dirichlet boundary condition. The feature of this analysis is that the considered problems has simultaneously a subcritical-critical-supercritical regime. We establish sufficient conditions for the existence of solutions and, in a singular setting, we prove a multiplicity property of solutions. The arguments combine the Palais principle of symmetric criticality with energy estimates, topological methods and critical point theory. Several open problems are raised in the final part of this talk.