



PhD mini-course

Grupo de Análise Funcional e Aplicações
Functional Analysis and Applications Group

Regularity of solutions to elliptic PDE

Leonardi Salvatore
University of Catania, Italy

Abstract

The course intends to be an introduction to regularity of Partial Differential Equations, and goes through the following topics:

- History of the problem;
- De Giorgi's regularity for a single linear equation with "good" right hand side;
- Stampacchia's regularity for a single linear equation with right hand side in L^1 ;
- Morrey-Campanato spaces;
- Campanato's decomposition and Stampacchia's decomposition;
- Systems of linear elliptic equations with non smooth coefficients;
- De Giorgi's counterexample to regularity;
- Other counterexamples to regularity;
- Systems with additional structural conditions: the selection of a De Giorgi's class of systems;
- Systems with right hand side in L^1 ;
- Overview of recent results.

Room 11.2.21

(First Session) April 27, 2023 - 09:00–12:00

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