Morrey-Campanato Spaces and classical operators

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Timetable: 12 hrs. First lecture on November 6, 2019, 09:00 (dates already fixed, see calendar), Torre Archimede, Room 2BC/30.

Course requirements: Basic knowledge of Functional analysis, Real analysis and Linear operator theory

Examination and grading:

SSD: MAT/05

Aim: Morrey spaces are widely used in applications to regularity properties of solutions to PDE’s. We overview known and recently obtained results on Morrey-Campanato spaces with respect to the properties of the spaces themselves, and also, we overview the study of classical operators of harmonic analysis in these spaces. We also proceed with some generalizations and modifications.

Course contents:

Campanato spaces. Definitions and basic facts, Interpolation results, Different characterizations of Campanato spaces. (2 hours).
Operators in Morrey-Campanato spaces: Maximal operator, Calderon-Zygmund operator, Riesz potential. Hardy operator (boundedness conditions and some important examples). (2 hours).

Bibliography: (the full list of sources will be given to the students in a separate file before the beginning of the course with recommendations).


