

Paragraphs from the books used to prepare the lectures.

1 Reminder of properties of Sobolev spaces.

Evans, Chapter 5, in particular Subsections 5.1, 5.2, 5.6 and 5.7. (Pages 240-250 and pages 261-278).

2 Second order elliptic equations.

Definition and properties of weak solutions. Functional Analysis tools. H^2 regularity Theory. Spectral Theory).

Evans, Chapter 6, in particular Subsections 6.1, 6.2, 6.3. (Fredholm Theory is in Appendix D.5).

3 De Giorgi-Nash Theorem. Hölder regularity Theory.

Giaquinta, Chapter 5, in particular Subsections 5.1 and 5.2.

Calderon-Zygmund and other properties of L^p and BMO functions are in Giaquinta, Chapter 4, Subsections 4.1 and 4.2.

4 Calculus of Variations

Evans, Chapter 8. (All the Sections).