NONLOCAL PROBLEMS - THEORY AND APPLICATIONS

ENRICO VALDINOCI

ABSTRACT. The course gives an introductory presentation of some recent developments for problems driven by the fractional Laplacian and related operators that arise in the theory of PDEs, calculus of variations, functional analysis and probability.

We will develop the necessary theory and discuss some applications for phase transitions, free boundary problems, crystal dislocations, water waves and quantum mechanics.