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Collana	Tutorials, schools, and workshops in the mathematical sciences
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Nota di contenuto	Intro -- Preface -- Contents -- Sobolev Spaces and Elliptic Boundary Value Problems -- 1 Sobolev Spaces, Inequalities, Dirichlet, and Neumann Problems for the Laplacian -- 1.1 Sobolev Spaces -- 1.2 First Properties -- 1.3 Traces -- 1.4 Interpolation -- 1.5 Transposition -- 1.6 Inequalities -- 1.7 Weak Solutions -- 1.8 Strong Solutions -- 1.9 Very Weak Solutions -- 1.10 Solutions in $H^s(\cdot)$, with $0 < s < \infty$ -- 2 The Stokes Problem with Various Boundary Conditions -- 2.1 The Problem (S) with Dirichlet Boundary Condition -- 2.2 The Stokes Problem with Navier Type Boundary Condition -- 2.3 The Stokes Problem with Navier Boundary Condition -- References -- Survey on the Decay of the Local Energy for the Solutions of the Nonlinear Wave Equation -- 1 Introduction and Preliminaries -- 2 Scattering for the Subcritical and Critical Wave Equation -- 2.1 The Subcritical Case -- 2.1.1 Prized Morawetz Estimate -- 2.1.2 Global Time Strichartz Norms -- 2.1.3 The Proof of Theorem 2.1 -- 2.2 The Critical Case --

2.2.1 Global Time Strichartz Norms -- 2.2.2 The Proof of Theorem 2.1 in the Case $p=5$ -- 3 Exponential Decay for the Local Energy of the Subcritical and Critical Wave Equation with Localized Semilinearity -- 3.1 Nonlinear Lax-Phillips Theory -- 3.2 Exponential Decay for the Local Energy of the Subcritical Wave Equation -- 3.2.1 The Compactness of $Z(T)$ -- 3.2.2 Proof of Theorem 3.1 -- 3.3 Exponential Decay for the Local Energy of the Critical Wave Equation -- 4 Polynomial Decay for the Local Energy of the Semilinear Wave Equation with Small Data -- 4.1 Fundamental Lemmas -- 4.2 Proof of Theorem 4.1: Existence and Decay of the Local Energy -- 5 Decay of the Local Energy for the Solutions of the Critical Klein-Gordon Equation -- 5.1 Strichartz Norms Global in Time -- 5.2 Exponential Decay of the Local Energy of Localized Linear Klein-Gordon Equation. 5.2.1 Semi-Group of Lax-Phillips Adapted to Localized Linear Klein-Gordon Equation -- 5.2.2 Proof of Theorem 5.9 -- 5.3 Proof of Theorem 5.1 -- Appendix -- References -- A Spectral Numerical Method to Approximate the Boundary Controllability of the Wave Equation with Variable Coefficients -- 1 Introduction -- 2 Numerical Approximation of the Control Problem -- 3 Minimal L^2 -Weighted Controls -- 4 Numerical Experiments -- 5 Appendix -- References -- Aggregation Equation and Collapse to Singular Measure -- 1 Introduction -- 2 Graph Reformulation and Main Results -- 3 Dini and Hölder Spaces -- 4 Modified Curved Cauchy Operators -- 5 Local Well-Posedness -- 6 Global Well-Posedness -- 6.1 Weak and Strong Damping Behavior of the Source Term -- 6.2 Global a Priori Estimates -- References -- Geometric Control of Eigenfunctions of Schrödinger Operators -- 1 Introduction -- 2 The Geometric Control Condition -- 3 Are There Examples for Which (OE()) Holds and (OS()) Does Not? -- 4 A Geometric Interpretation of (V-GCC) and Proof of Theorem 9 -- 5 On the Proof of Theorem 10 -- References -- Stability of a Graph of Strings with Local Kelvin-Voigt Damping -- 1 Introduction -- 2 Well-Posedness of the System -- 3 Asymptotic Behavior -- References.
