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| Autore | Mitrea Dorina |
| Titolo | Distributions, Partial Differential Equations, and Harmonic Analysis [[electronic resource] /] / by Dorina Mitrea |
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| Descrizione fisica | 1 online resource (475 p.) |
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| Disciplina | 515.353 |
| Soggetti | Partial differential equations Functional analysis Fourier analysis Potential theory (Mathematics) Partial Differential Equations Functional Analysis Fourier Analysis Potential Theory |
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| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di contenuto | Introduction -- Summary of Topological and Functional Analysis Results -- Weak Derivatives -- The Space $D_0()$ of Distributions -- The Fourier Transform -- The Space of Tempered Distributions -- Fundamental Solution -- The Laplace Operator -- The Heat Operator -- The Wave Operator -- The Lamé Operator -- Fundamental Solutions for Other Operators -- Hypoelliptic operators -- Sobolev spaces -- Appendix -- References. . |
| Sommario/riassunto | The aim of this book is to offer, in a concise, rigorous, and largely self- contained manner, a rapid introduction to the theory of distributions and its applications to partial differential equations and harmonic analysis. The book is written in a format suitable for a graduate course spanning either over one-semester, when the focus is primarily on the foundational aspects, or over a two-semester period that allows for the proper amount of time to cover all intended applications as well. It presents a balanced treatment of the topics involved, and contains a large number of exercises (upwards of two hundred, more than half of |

which are accompanied by solutions), which have been carefully chosen to amplify the effect, and substantiate the power and scope, of the theory of distributions. Graduate students, professional mathematicians, and scientifically trained people with a wide spectrum of mathematical interests will find this book to be a useful resource and complete self-study guide. Throughout, a special effort has been made to develop the theory of distributions not as an abstract edifice but rather give the reader a chance to see the rationale behind various seemingly technical definitions, as well as the opportunity to apply the newly developed tools (in the natural build-up of the theory) to concrete problems in partial differential equations and harmonic analysis, at the earliest opportunity.
