Introductory Applications of Partial Differential Equations: With Emphasis on Wave Propagation and Diffusion

By G. L. Lamb Jr.

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INTRODUCTORY APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS

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This is the ideal text for students and professionals who have some familiarity with partial differential equations, and who now wish to consolidate and expand their knowledge. Unlike most other texts on this topic, it interweaves prior knowledge of mathematics and physics, especially heat conduction and wave motion, into a presentation that demonstrates their interdependence. The result is a superb teaching text that reinforces the reader's understanding of both mathematics and physics. Rather than presenting the mathematics in isolation and out of context, problems in this text are framed to show how partial differential equations can be used to obtain specific information about the physical system being analyzed.

Designed for upper-level students, professionals and researchers in engineering, applied mathematics, physics, and optics, Professor Lamb's text is lucid in its presentation and comprehensive in its coverage of all the important topic areas, including:
* One-Dimensional Problems
* The Laplace Transform Method
* Two and Three Dimensions
* Green's Functions
* Spherical Geometry
* Fourier Transform Methods
* Perturbation Methods
* Generalizations and First Order Equations

In addition, this text includes a supplementary chapter of selected topics and handy appendices that review Fourier Series, Laplace Transform, Sturm-

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Editorial Review

From the Publisher
Designed to provide students with the ability to translate physical situations into mathematical terms. Offers them the opportunity to synthesize their scattered exposure to partial differential equations and to realize the usefulness of various topics within this area. One-dimensional problems, Laplace Transform method, Green's functions, spherical geometry and first order equations are among the subjects discussed.

From the Back Cover
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About the Author
G. L. LAMB, Jr., is Professor of Mathematics and Optical Sciences at the University of Arizona.

Users Review

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