
Description:
A broad introduction to PDEs with an emphasis on specialized topics and applications occurring in a variety of fields

Featuring a thoroughly revised presentation of topics, Beginning Partial Differential Equations, Third Edition provides a challenging, yet accessible, combination of techniques, applications, and introductory theory on the subject of partial differential equations. The new edition offers nonstandard coverage on material including Burgers equation, the telegraph equation, damped wave motion, and the use of characteristics to solve nonhomogeneous problems.

The Third Edition is organized around four themes: methods of solution for initial-boundary value problems; applications of partial differential equations; existence and properties of solutions; and the use of software to experiment with graphics and carry out computations. With a primary focus on wave and diffusion processes, Beginning Partial Differential Equations, Third Edition also includes:

- Proofs of theorems incorporated within the topical presentation, such as the existence of a solution for the Dirichlet problem
- The incorporation of Maple to perform computations and experiments
- Unusual applications, such as Poe’s pendulum
- Advanced topical coverage of special functions, such as Bessel, Legendre polynomials, and spherical harmonics
- Fourier and Laplace transform techniques to solve important problems

Beginning Partial Differential Equations, Third Edition is an ideal textbook for upper-undergraduate and first-year graduate-level courses in analysis and applied mathematics, science, and engineering.

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