Symmetries and Laplacians: Introduction to Harmonic Analysis, Group Representations and Applications

By Mathematics

Dover Publications. Paperback. Book Condition: New. Paperback. 464 pages. Dimensions: 9.1in. x 6.4in. x 1.0in.Designed as an introduction to harmonic analysis and group representations, this book examines concepts, ideas, results, and techniques related to symmetry groups and Laplacians. Its exposition is based largely on examples and applications of general theory, covering a wide range of topics rather than delving deeply into any particular area. Author David Gurarie, a Professor of Mathematics at Case Western Reserve University, focuses on discrete or continuous geometrical objects and structures, such as regular graphs, lattices, and symmetric Riemannian manifolds. Starting with the basics of representation theory, Professor Gurarie discusses commutative harmonic analysis, representations of compact and finite groups, Lie groups, and the Heisenberg group and semidirect products. Among numerous applications included are integrable hamiltonian systems, geodesic flows on symmetric spaces, and the spectral theory of the Hydrogen atom (Schrodinger operator with Coulomb potential) explicated by its Runge-Lenz symmetry. Three helpful appendixes include supplemental information, and the text concludes with references, a list of frequently used notations, and an index. This item ships from multiple locations. Your book may arrive from Roseburg,OR, La Vergne,TN. Paperback.

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