Introduction to Hodge Theory

By Jose Bertin, Jean-Pierre Demailly, Luc Illusie, Chris Peters

American Mathematical Society. Paperback. Book Condition: new. BRAND NEW, Introduction to Hodge Theory, Jose Bertin, Jean-Pierre Demailly, Luc Illusie, Chris Peters, Hodge theory originated as an application of harmonic theory to the study of the geometry of compact complex manifolds. The ideas have proved to be quite powerful, leading to fundamentally important results throughout algebraic geometry. This book consists of expositions of various aspects of modern Hodge theory. Its purpose is to provide the nonexpert reader with a precise idea of the current status of the subject. The three chapters develop distinct but closely related subjects: L^2 Hodge theory and vanishing theorems; Frobenius and Hodge degeneration; variations of Hodge structures and mirror symmetry.The techniques employed cover a wide range of methods borrowed from the heart of mathematics: elliptic PDE theory, complex differential geometry, algebraic geometry in characteristic p, cohomological and sheaf-theoretic methods, deformation theory of complex varieties, Calabi-Yau manifolds, singularity theory, etc. A special effort has been made to approach the various themes from their most natural starting points. Each of the three chapters is supplemented with a detailed introduction and numerous references. The reader will find precise statements of quite a number of open problems that have been the...

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