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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part I Holomorphic Functions and Complex Spaces -- Convexity Notions -- Complex Manifolds -- Classical Questions of Several Complex Variables -- Part II The Method of L^2 Estimates -- Basics of Hilb ert Space Theory -- Harmonic Forms -- Vanishing Theorems -- Finiteness Theorems -- Notes on Complete Kahler Domains (= CKDs) -- Part III L^2 Variant of Oka-Cartan Theory -- Extension Theorems -- Division Theorems -- Multiplier Ideals -- Part IV Bergman Kernels -- The Bergman Kernel and Metric -- Bergman Spaces and Associated Kernels -- Sequences of Bergman Kernels -- Parameter Dependence -- Part V L^2 Approaches to Holomorphic Foliations -- Holomorphic Foliation and Stable Sets -- L^2 Method Applied to Levi Flat Hypersurfaces -- LFHs in Tori and Hopf Surfaces.
Sommario/riassunto	The purpose of this monograph is to present the current status of a rapidly developing part of several complex variables, motivated by the applicability of effective results to algebraic geometry and differential

geometry. Highlighted are the new precise results on the L^2 extension of holomorphic functions. In Chapter 1, the classical questions of several complex variables motivating the development of this field are reviewed after necessary preparations from the basic notions of those variables and of complex manifolds such as holomorphic functions, pseudoconvexity, differential forms, and cohomology. In Chapter 2, the L^2 method of solving the d-bar equation is presented emphasizing its differential geometric aspect. In Chapter 3, a refinement of the Oka–Cartan theory is given by this method. The L^2 extension theorem with an optimal constant is included, obtained recently by Z. Bocki and by Q.-A. Guan and X.-Y. Zhou separately. In Chapter 4, various results on the Bergman kernel are presented, including recent works of Maitani–Yamaguchi, Berndtsson, and Guan–Zhou. Most of these results are obtained by the L^2 method. In the last chapter, rather specific results are discussed on the existence and classification of certain holomorphic foliations and Levi flat hypersurfaces as their stables sets. These are also applications of the L^2 method obtained during these 15 years.