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Sommario/riassunto

Discriminant equations are an important class of Diophantine equations with close ties to algebraic number theory, Diophantine approximation and Diophantine geometry. This book is the first comprehensive account of discriminant equations and their applications. It brings together many aspects, including effective results over number fields, effective results over finitely generated domains, estimates on the number of solutions, applications to algebraic integers of given discriminant, power integral bases, canonical number systems, root separation of polynomials and reduction of hyperelliptic curves. The authors' previous title, Unit Equations in Diophantine Number Theory, laid the groundwork by presenting important results that are used as tools in the present book. This material is briefly summarized in the introductory chapters along with the necessary basic algebra and algebraic number theory, making the book accessible to experts and young researchers alike.