Record Nr. Autore	UNINA9910299972903321 Ishii Shihoko
Titolo	Introduction to Singularities / / by Shihoko Ishii
Pubbl/distr/stampa	Tokyo : , : Springer Japan : , : Imprint : Springer, , 2014
ISBN	4-431-55081-X
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (VIII, 223 p. 102 illus.)
Disciplina	516.35
Soggetti	Algebraic geometry Associative rings Rings (Algebra) Commutative algebra Commutative rings Algebraic Geometry Associative Rings and Algebras Commutative Rings and Algebras
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographic references (pages 215-219) and index.
Sommario/riassunto	This book is an introduction to singularities for graduate students and researchers. It is said that algebraic geometry originated in the seventeenth century with the famous work Discours de la méthode pour bien conduire sa raison, et chercher la vérité dans les sciences by Descartes. In that book he introduced coordinates to the study of geometry. After its publication, research on algebraic varieties developed steadily. Many beautiful results emerged in mathematicians' works. Most of them were about non-singular varieties. Singularities were considered "bad" objects that interfered with knowledge of the structure of an algebraic variety. In the past three decades, however, it has become clear that singularities are necessary for us to have a good description of the framework of varieties. For example, it is impossible to formulate minimal model theory for higher-dimensional cases without singularities. Another example is that the moduli spaces of varieties have natural compactification, the boundaries of which

1.

correspond to singular varieties. A remarkable fact is that the study of singularities is developing and people are beginning to see that singularities are interesting and can be handled by human beings. This book is a handy introduction to singularities for anyone interested in singularities. The focus is on an isolated singularity in an algebraic variety. After preparation of varieties, sheaves, and homological algebra, some known results about 2-dim ensional isolated singularities are introduced. Then a classification of higher-dimensional isolated singularities is shown according to plurigenera and the behavior of singularities under a deformation is studied.