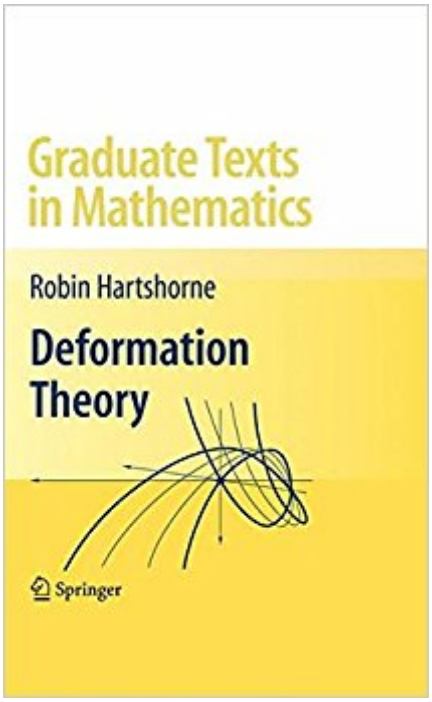
Deformation Theory (Graduate Texts In Mathematics)



Synopsis

The basic problem of deformation theory in algebraic geometry involves watching a small deformation of one member of a family of objects, such as varieties, or subschemes in a fixed space, or vector bundles on a fixed scheme. In this new book, Robin Hartshorne studies first what happens over small infinitesimal deformations, and then gradually builds up to more global situations, using methods pioneered by Kodaira and Spencer in the complex analytic case, and adapted and expanded in algebraic geometry by Grothendieck. The author includes numerous exercises, as well as important examples illustrating various aspects of the theory. This text is based on a graduate course taught by the author at the University of California, Berkeley.

Book Information

Series: Graduate Texts in Mathematics (Book 257)

Hardcover: 234 pages

Publisher: Springer; 2010 edition (December 10, 2009)

Language: English

ISBN-10: 1441915958

ISBN-13: 978-1441915955

Product Dimensions: 6.1 x 0.6 x 9.2 inches

Shipping Weight: 1.1 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars 1 customer review

Best Sellers Rank: #915,490 in Books (See Top 100 in Books) #159 inÃ Â Books > Science & Math > Mathematics > Geometry & Topology > Algebraic Geometry #542 inÃ Â Books > Textbooks > Science & Mathematics > Mathematics > Geometry #2427 inÃ Â Books > Textbooks > Science & Mathematics > Mathematics > Algebra & Trigonometry

Customer Reviews

From the reviews:Ã¢â ¬Å“Robin Hartshorne is the author of a well-known textbook from which several generations of mathematicians have learned modern algebraic geometry since it first appeared in 1977. This introduction to deformation theory is based on his notes for a course he taught in 1979. The mathematical community has to thank him for updating and expanding them into this book Ã¢â ¬Â¦. This volume is an important addition to the literature and will help new generations to acquire its subject.Ã¢â ¬Â• (Ch. Baxa, Monatshefte fÃƒÂ r Mathematik, Vol. 169 (1), January, 2013)Ã¢â ¬Å“Deformation theory is the study of the behaviour of a family of algebraic geometric objects, such as schemes or coherent sheaves, near a given element. Ã¢â ¬Â¦ The book

is recommended for advanced graduate students and researchers in algebraic geometry who want to learn deformation theory. Ã¢â ¬Â¦ The book is clearly written, the abstract material is illustrated by examples where appropriate and there are exercises dealing with concrete geometrical problems at the end of each section.Ã¢â ¬Â• (GÃƒÂ¡bor Megyesi, The Mathematical Gazette, Vol. 96 (537), November, 2012)Ã¢â ¬Å“In the development of algebraic deformation theory, a graduate text explaining the fundamentals of the theory had been lacking. So, eventually, somebody made the effort and wrote down the essentials. Happily this somebody is Robin Hartshorne Ã¢â ¬Â¦ . The precise formulation and good language make the book capture the audience. Ã¢â ¬Â¦ a fundamental text for anybody who wants to learn deformation theory Ã¢â ¬Â¦ . Also, a lot of relevant references are included.Ã¢â ¬Â•Ã Â- Ã Â- Ã Â- (Arvid Siqveland, Mathematical Reviews, Issue 2011 c)Ã¢â ¬Å“Deformation theory is a ubiquitous subject: From the Taylor expansion in Calculus to the deformation of Galois representations. Ã¢â ¬Â¦ Since deformation theory could be considered a central topic in algebraic geometry Ã¢â ¬Â¦ textbook where some of the main results and methods are collected in one place is certainly welcome. Ã¢â ¬Â¦ inclusion of exercises and plenty of examples, make this book suitable for a course on this topic or for self-study, with the only prerequisite the now standard textbook on Algebraic Geometry by the same author.Ã¢â ¬Â• (Felipe Zaldivar, The Mathematical Association of America, March, 2010)Ã¢â ¬Å“No doubt, this masterly written book gives an excellent first introduction to algebraic deformation theory, and a perfect motivation for further, more advanced reading likewise. It is the authorÃ¢â ¬â„¢s masterful style of expository writing that makes this text particularly valuable for seasoned graduate students and for future researchers in the field. The list of 177 references at the end of the book, which the author frequently refers to throughout the text, is another special feature of the volume under review.Ã¢â ¬Â• (Werner Kleinert, Zentralblatt MATH, Vol. 1186, 2010)

The basic problem of deformation theory in algebraic geometry involves watching a small deformation of one member of a family of objects, such as varieties, or subschemes in a fixed space, or vector bundles on a fixed scheme. In this new book, Robin Hartshorne studies first what happens over small infinitesimal deformations, and then gradually builds up to more global situations, using methods pioneered by Kodaira and Spencer in the complex analytic case, and adapted and expanded in algebraic geometry by Grothendieck. Topics include: * deformations over the dual numbers; * smoothness and the infinitesimal lifting property; * Zariski tangent space and obstructions to deformation problems; * pro-representable functors of Schlessinger; * infinitesimal study of moduli spaces such as the Hilbert scheme, Picard scheme, moduli of curves, and moduli of

stable vector bundles. The author includes numerous exercises, as well as important examples illustrating various aspects of the theory. This text is based on a graduate course taught by the author at the University of California, Berkeley.

I received the book in perfect conditions. Everything is ok. Thank you

Deformation Theory (Graduate Texts in Mathematics) Graph Theory (Graduate Texts in Mathematics) Algebraic Graph Theory (Graduate Texts in Mathematics) Matroid Theory (Oxford Graduate Texts in Mathematics) Matrices: Theory and Applications (Graduate Texts in Mathematics) An Introduction to Ergodic Theory (Graduate Texts in Mathematics) Number Theory: Volume I: Tools and Diophantine Equations (Graduate Texts in Mathematics) Representation Theory: A First Course (Graduate Texts in Mathematics) A Course in the Theory of Groups (Graduate Texts in Mathematics, Vol. 80) Introduction to Lie Algebras and Representation Theory (Graduate Texts in Mathematics) (v. 9) Quantum Theory for Mathematicians (Graduate Texts in Mathematics) An Introduction to the Theory of Groups (Graduate Texts in Mathematics) A Course in Number Theory and Cryptography (Graduate Texts in Mathematics) An Introduction to Banach Space Theory (Graduate Texts in Mathematics) Modern Geometry Ã¢â ¬â ¢ Methods and Applications: Part I: The Geometry of Surfaces, Transformation Groups, and Fields (Graduate Texts in Mathematics) (Pt. 1) Functions of One Complex Variable II (Graduate Texts in Mathematics, Vol. 159) Riemann Surfaces (Oxford Graduate Texts in Mathematics) Commutative Algebra: with a View Toward Algebraic Geometry (Graduate Texts in Mathematics) The Arithmetic of Elliptic Curves (Graduate Texts in Mathematics) Differential Geometry: Connections, Curvature, and Characteristic Classes (Graduate Texts in Mathematics)