

1. Record Nr.	UNINA9910254085903321
Autore	Lütkebohmert Werner
Titolo	Rigid Geometry of Curves and Their Jacobians / / by Werner Lütkebohmert
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-27371-X
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (398 p.)
Collana	Ergebnisse der Mathematik und ihrer Grenzgebiete. 3. Folge / A Series of Modern Surveys in Mathematics, , 0071-1136 ; ; 61
Disciplina	516.352
Soggetti	Geometry, Algebraic Functions of complex variables Algebraic Geometry Several Complex Variables and Analytic Spaces
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Rigid Geometry of Curves and Their Jacobians; Introduction; Chapter 1: Classical Rigid Geometry; 1.1 Non-Archimedean Fields; 1.2 Restricted Power Series; 1.3 Affinoid Spaces; 1.4 The Maximum Principle; 1.5 Rigid Analytic Spaces; 1.6 Coherent Sheaves; 1.7 Line Bundles; 1.8 Algebraization of Proper Rigid Analytic Curves; Chapter 2: Mumford Curves; 2.1 Tate's Elliptic Curve; 2.2 Schottky Groups; 2.3 Definition and Properties; 2.4 Skeletons; 2.5 Automorphic Functions; 2.6 Drinfeld's Polarization; 2.7 Rigid Analytic Tori and Their Duals; 2.8 Jacobian Variety of a Mumford Curve 2.9 Riemann's Vanishing Theorem Chapter 3: Formal and Rigid Geometry; 3.1 Canonical Reduction of Affinoid Domains; 3.1.1 Functors AK and AKAK; 3.1.2 Formal Analytic Spaces; 3.1.3 Finiteness Theorem of Grauert-Remmert-Gruson; 3.2 Admissible Formal Schemes; 3.3 Generic Fiber of Admissible Formal Schemes; 3.4 Reduced Fiber Theorem; 3.4.1 Analytic Method of Grauert-Remmert-Gruson; 3.4.2 Elementary Method of Epp; 3.4.3 The Natural Approach; 3.5 Complements on Flatness; 3.6 Approximation in Smooth Rigid Spaces; 3.7 Compactification of Smooth Curve Fibrations; Chapter 4: Rigid Analytic Curves

4.1 Formal Fibers; 4.2 Genus Formula; 4.3 Meromorphic Functions; 4.4 Formal Stable Reduction; 4.5 Stable Reduction; 4.6 Universal Covering of a Curve; 4.7 Characterization of Mumford Curves; Chapter 5: Jacobian Varieties; 5.1 Jacobian of a Smooth Projective Curve; 5.2 Generalized Jacobian of a Semi-Stable Curve; 5.3 Lifting of the Jacobian of the Reduction; 5.4 Morphisms to Rigid Analytic Groups with Semi-Abelian Reduction; 5.5 Uniformization of Jacobians; 5.6 Applications to Abelian Varieties; Chapter 6: Raynaud Extensions; 6.1 Basic Facts; 6.2 Line Bundles; 6.3 Duality; 6.4 Algebraization
6.5 Polarization of Jacobians; 6.6 Parameterizing Degenerating Abelian Varieties; Chapter 7: Abeloid Varieties; 7.1 Basic Facts on Abeloid Varieties; 7.2 Generation of Subgroups by Smooth Covers; 7.3 Extension of Formal Tori; 7.4 Morphisms from Curves to Groups; 7.5 Stable Reduction of Relative Curves; 7.6 The Structure Theorem; 7.7 Proof of the Structure Theorem; Appendix: Miscellaneous; A.1 Some Notions about Graphs; A.2 Torus Extensions of Formal Abelian Schemes; A.3 Cubical Structures; Glossary of Notations; References; Index

Sommario/riassunto

This book presents some of the most important aspects of rigid geometry, namely its applications to the study of smooth algebraic curves, of their Jacobians, and of abelian varieties - all of them defined over a complete non-archimedean valued field. The text starts with a survey of the foundation of rigid geometry, and then focuses on a detailed treatment of the applications. In the case of curves with split rational reduction there is a complete analogue to the fascinating theory of Riemann surfaces. In the case of proper smooth group varieties the uniformization and the construction of abelian varieties are treated in detail. Rigid geometry was established by John Tate and was enriched by a formal algebraic approach launched by Michel Raynaud. It has proved as a means to illustrate the geometric ideas behind the abstract methods of formal algebraic geometry as used by Mumford and Faltings. This book should be of great use to students wishing to enter this field, as well as those already working in it.
