1. Record Nr. UNINA9910146306203321

Titolo	Model Theory and Algebraic Geometry : An introduction to E. Hrushovski's proof of the geometric Mordell-Lang conjecture / / edited by Elisabeth Bouscaren
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1998
ISBN	3-540-68521-9
Edizione	[1st ed. 1998.]
Descrizione fisica	1 online resource (XVI, 216 p.)
Collana	Lecture Notes in Mathematics, , 1617-9692 ; ; 1696
Classificazione	03C60
Disciplina	516.35
Soggetti	Geometry, Algebraic Logic, Symbolic and mathematical Number theory Algebraic Geometry Mathematical Logic and Foundations Number Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	to model theory -- to stability theory and Morley rank -- Omega-stable groups -- Model theory of algebraically closed fields -- to abelian varieties and the Mordell-Lang conjecture -- The model-theoretic content of Lang’s conjecture -- Zariski geometries -- Differentially closed fields -- Separably closed fields -- Proof of the Mordell-Lang conjecture for function fields -- Proof of Manin’s theorem by reduction to positive characteristic.
Sommario/riassunto	Introduction Model theorists have often joked in recent years that the part of mathemat- ical logic known as "pure model theory" (or stability theory), as opposed to the older and more traditional "model theory applied to algebra" , turns out to have more and more to do with other subjects ofmathematics and to yield gen- uine applications to combinatorial geometry, differential algebra and algebraic geometry. We illustrate this by presenting the very striking application to diophantine geometry due to Ehud Hrushovski: using model theory, he

has given the first proof valid in all characteristics of the "Mordell-Lang conjecture for function fields" (The Mordell-Lang conjecture for function fields, Journal AMS 9 (1996), 667-690). More recently he has also given a new (model theoretic) proof of the Manin-Mumford conjecture for semi-abelian varieties over a number field. His proofyields the first effective bound for the cardinality ofthe finite sets involved (The Manin-Mumford conjecture, preprint). There have been previous instances of applications of model theory to alge- bra or number theory, but these appl~cations had in common the feature that their proofs used a lot of algebra (or number theory) but only very basic tools and results from the model theory side: compactness, first-order definability, elementary equivalence...