

1. Record Nr.	UNINA9910969267003321
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Titolo	Twisted L-functions and monodromy // by Nicholas M. Katz
Pubbl/distr/stampa	Princeton, : Princeton University Press, 2002
ISBN	9786612820892 9781282820890 1282820893 9781400824885 1400824885
Edizione	[Core Textbook]
Descrizione fisica	1 online resource (258 p.)
Collana	Annals of mathematics studies ; ; no. 150
Classificazione	SI 830
Disciplina	512/.74
Soggetti	L-functions Monodromy groups
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 (p. [235]-239) and index.
Nota di contenuto	pt. 1. Background material -- pt. 2. Twist sheaves, over an algebraically closed field -- pt. 3. Twist sheaves, over a finite field -- pt. 4. Twist sheaves over schemes of finite type over $Z$ .
Sommario/riassunto	For hundreds of years, the study of elliptic curves has played a central role in mathematics. The past century in particular has seen huge progress in this study, from Mordell's theorem in 1922 to the work of Wiles and Taylor-Wiles in 1994. Nonetheless, there remain many fundamental questions where we do not even know what sort of answers to expect. This book explores two of them: What is the average rank of elliptic curves, and how does the rank vary in various kinds of families of elliptic curves? Nicholas Katz answers these questions for families of "big" twists of elliptic curves in the function field case (with a growing constant field). The monodromy-theoretic methods he develops turn out to apply, still in the function field case, equally well to families of big twists of objects of all sorts, not just to elliptic curves. The leisurely, lucid introduction gives the reader a clear picture of what is known and what is unknown at present, and situates the problems solved in this book within the broader context of the overall study of elliptic curves. The book's technical core makes use of,

and explains, various advanced topics ranging from recent results in finite group theory to the machinery of  $l$ -adic cohomology and monodromy. Twisted L-Functions and Monodromy is essential reading for anyone interested in number theory and algebraic geometry.

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