

1. Record Nr.	UNINA9910437866303321
Titolo	Noncommutative Iwasawa main conjectures over totally real fields : Munster, April 2011 // John Coates ... [et al.], editors
Pubbl/distr/stampa	Heidelberg, : Springer, 2013
ISBN	3-642-32199-2
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (215 p.)
Collana	Springer proceedings in mathematics and statistics, , 2194-1009 ; ; v. 29
Altri autori (Persone)	CoatesJohn
Disciplina	512.74
Soggetti	Iwasawa theory Finite fields (Algebra)
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.
Nota di contenuto	Preface -- John Coates, Dohyeong Kim: Introduction to the work of M. Kakde on the non-commutative main conjectures for totally real fields -- R. Sujatha: Reductions of the main conjecture -- Ted Chinburg, Georgios Pappas, Martin J. Taylor: The group logarithm past and present -- Peter Schneider, Otmar Venjakob: $K_1$ of certain Iwasawa algebras, after Kakde -- Mahesh Kakde: Congruences between abelian $p$ -adic zeta functions -- Otmar Venjakob: On the work of Ritter and Weiss in comparison with Kakde's approach -- Malte Witte: Noncommutative Main Conjectures of Geometric Iwasawa Theory.
Sommario/riassunto	The algebraic techniques developed by Kakde will almost certainly lead eventually to major progress in the study of congruences between automorphic forms and the main conjectures of non-commutative Iwasawa theory for many motives. Non-commutative Iwasawa theory has emerged dramatically over the last decade, culminating in the recent proof of the non-commutative main conjecture for the Tate motive over a totally real $p$ -adic Lie extension of a number field, independently by Ritter and Weiss on the one hand, and Kakde on the other. The initial ideas for giving a precise formulation of the non-commutative main conjecture were discovered by Venjakob, and were then systematically developed in the subsequent papers by Coates-Fukaya-Kato-Sujatha-Venjakob and Fukaya-Kato. There was also parallel related work in this direction by Burns and Flach on the

equivariant Tamagawa number conjecture. Subsequently, Kato discovered an important idea for studying the  $K_1$  groups of non-abelian Iwasawa algebras in terms of the  $K_1$  groups of the abelian quotients of these Iwasawa algebras. Kakde's proof is a beautiful development of these ideas of Kato, combined with an idea of Burns, and essentially reduces the study of the non-abelian main conjectures to abelian ones. The approach of Ritter and Weiss is more classical, and partly inspired by techniques of Frohlich and Taylor. Since many of the ideas in this book should eventually be applicable to other motives, one of its major aims is to provide a self-contained exposition of some of the main general themes underlying these developments. The present volume will be a valuable resource for researchers working in both Iwasawa theory and the theory of automorphic forms.

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