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Shimura varieties, Rapoport-Zink spaces and local Langlands correspondences. (Variétés de Shimura, espaces de Rapoport-Zink et correspondances de Langlands locales.) (French, English) Zbl 1050.11002

Astérisque 291. Paris: Société Mathématique de France (ISBN 2-85629-150-3). xii, 331 p. (2004).

The two articles contained in this volume will be reviewed individually.

Summary: This volume contains two articles. Both deal with generalizations of Michael Harris' and Richard Taylor's work on the cohomology of P.E.L. type Shimura varieties of signature $(1, n-1)$ and on the cohomology of Lubin-Tate spaces. They are based on the work of Robert Kottwitz on those varieties in the general signature case, and on the work of Michael Rapoport and Thomas Zink on moduli spaces of p-divisible groups generalizing the one of Lubin-Tate and Drinfeld. In the first article it is proved that the ℓ-adique étale cohomology of some of those "supersingular" moduli spaces of p-divisible groups realizes some cases of local Langlands correspondences. For this the author establishes a formula linking the cohomology of those spaces to the one of the "supersingular" locus of a Shimura variety. Then he proves that the supercuspidal part of the cohomology of those varieties is completely contained in the one of the "supersingular" locus.

The second article links the cohomology of a Newton stratum of the Shimura variety, for example the "supersingular" stratum, to the cohomology of the attached local moduli space of p-divisible groups and to the cohomology of some global varieties in positive characteristic named Igusa varieties that generalize the classical Igusa curves attached to modular curves.

MSC:

11-06	Proceedings, conferences, collections, etc. pertaining to number theory
00B15	Collections of articles of miscellaneous specific interest
14-06	Proceedings, conferences, collections, etc. pertaining to algebraic geometry
11G18	Arithmetic aspects of modular and Shimura varieties
14G35	Modular and Shimura varieties
11S37	Langlands-Weil conjectures, nonabelian class field theory