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Nota di contenuto	Contents; 1 Introduction; 1.1 Classical Iwasawa theory; 1.1.1 Galois theoretic interpretation of the class group; 1.1.2 The Iwasawa algebra as a deformation ring; 1.1.3 Pseudo-representations; 1.1.4 Two-dimensional universal deformations; 1.2 Selmer groups; 1.2.1 Deligne's rationality conjecture; 1.2.2 Ordinary Galois representations; 1.2.3 Greenberg's Selmer groups; 1.2.4 Selmer groups with general coefficients; 1.3 Deformation and adjoint square Selmer groups; 1.3.1 Nearly ordinary deformation rings; 1.3.2 Adjoint square Selmer groups and differentials 1.3.3 Universal deformation rings are noetherian1.3.4 Elliptic modularity at a glance; 1.4 Iwasawa theory for deformation rings; 1.4.1 Galois action on deformation rings; 1.4.2 Control of adjoint square Selmer groups; 1.4.3 -adic forms; 1.5 Adjoint square L-invariants; 1.5.1 Balanced Selmer groups; 1.5.2 Greenberg's L-invariant; 1.5.3 Proof of Theorem 1.80; 2 Automorphic forms on inner forms of GL(2); 2.1 Quaternion algebras over a number field; 2.1.1 Quaternion algebras; 2.1.2 Orders of quaternion algebras; 2.2 A short review of algebraic geometry; 2.2.1 Affine schemes

2.2.2 Affine algebraic groups2.2.3 Schemes; 2.3 Automorphic forms on quaternion algebras; 2.3.1 Arithmetic quotients; 2.3.2 Archimedean Hilbert modular forms; 2.3.3 Hilbert modular forms with integral coefficients; 2.3.4 Duality and Hecke algebras; 2.3.5 Quaternionic automorphic forms; 2.3.6 The Jacquet-Langlands correspondence; 2.3.7 Local representations of GL(2); 2.3.8 Modular Galois representations; 2.4 The integral Jacquet-Langlands correspondence; 2.4.1 Classical Hecke operators; 2.4.2 Hecke algebras; 2.4.3 Cohomological correspondences; 2.4.4 Eichler-Shimura isomorphisms 2.5 Theta series2.5.1 Quaternionic theta series; 2.5.2 Siegel's theta series; 2.5.3 Transformation formulas; 2.5.4 Theta series of imaginary quadratic fields; 2.6 The basis problem of Eichler; 2.6.1 The elliptic Jacquet-Langlands correspondence; 2.6.2 Eichler's integral correspondence; 3 Hecke algebras as Galois deformation rings; 3.1 Hecke algebras; 3.1.1 Automorphic forms on definite quaternions; 3.1.2 Hecke operators; 3.1.3 Inner products; 3.1.4 Ordinary Hecke algebras; 3.1.5 Automorphic forms of higher weight; 3.2 Galois deformation; 3.2.1 Minimal deformation problems
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3.4.2 Deformation without monodromy conditions

Sommario/riassunto

Describing the applications found for the Wiles and Taylor technique, this book generalizes the deformation theoretic techniques of Wiles-Taylor to Hilbert modular forms (following Fujiwara's treatment), and also discusses applications found by the author.