

Index

- 1-motive, 58
- Abelian type Shimura datum, 37
- adelic Borchers product, 82
- admissible compact open subgroup, 26, 27
- admissible parabolic, 28
- Arakelov automorphic vector bundle, 51
- Arakelov theory, 51
 - extended, 13, 51
- arithmetic Chern character, 54
- arithmetic Chern class, 54
- arithmetic Chow group, 54
- arithmetic volume, 2, 54, 56
 - functoriality, 56
 - of Shimura varieties of orthogonal type, 117
 - of special cycles, 117
- arithmeticity condition, 31
- automorphic vector bundle
 - extension to compactifications, 50
 - functoriality, 51
 - integral model of, 51
- Borchers lift, 79
 - input forms, 91
 - integral of, 85
- Borchers product, 80
 - adelic, 82
 - designing special, 99
 - divisor of, 85
 - integrality properties, 85
- Bott–Chern character, 52
- boundary component, 28
 - of Shimura data of orthogonal type, 39
 - of Shimura data of symplectic type, 34
 - point-like, 65
- boundary components
 - functoriality of, 29
 - partial order, 30
- boundary morphism, 28
 - functoriality of, 29
- boundary strata
 - of a mixed Shimura variety, 45
- canonical model
 - of a mixed Shimura variety, 44
 - of mixed Shimura variety ass. with boundary points, 65
 - of standard principal bundle, 48
 - of toroidal compactification, 46
- Chern character
 - arithmetic, 54
- Chern class
 - arithmetic, 54
- Chow group
 - arithmetic, 54
- Clifford algebra, 37, 75
- compact dual, 47
 - canonical model of, 48
 - functoriality, 48
- compact open subgroup
 - admissible, 26, 27
- compactified extended mixed Shimura datum
 - p -integral, 31
- conical complex, 30
- connected components
 - of Shimura varieties of orthogonal type, 76
- Deligne torus, 25
- discriminant kernel, 14, 76
- Eisenstein series, 84
- extended mixed Shimura datum
 - p -integral, 26
 - p -integral compactified, 31
 - extension property, 18, 45
- Fourier coefficients, 70
 - of Eisenstein series, 3, 84
- Fourier expansion
 - existence of, 71
- Fricke involution, 98
- functional equation
 - of quadratic L -series, 135
 - of the Riemann zeta function, 135
- geometric volume, 1, 56

- comparison factor for, 90
 - of Shimura varieties of orthogonal type, 117
 - of special cycles, 117
- Green's form
 - of logarithmic type, 53
- group scheme
 - of symplectic similtudes, 32
 - of type (P), 22
 - paraboic, 23
 - quasi-paraboic, 23
 - spin, 37
 - split of type (P), 22
- Hecke decomposition, 98
- Hecke operator, 26
- Heegner point, 118, 123
- height, 54
 - functoriality, 56
- heights
 - of special cycles, 117
- Hermitian automorphic vector bundle, 51
- Hermitian metric
 - good, 50
 - on automorphic vector bundles, 51
 - singular, 52
- Hilbert modular surface, 11, 123
- Hodge embedding
 - of Shimura data of orthogonal type, 75
- Hodge structure, 16
 - mixed, 16, 25, 28
- Hodge type Shimura datum, 37
- imaginary part
 - projection on the, 29
- induced semilinear representation, 132
- integral Borcherds product, 85
- Kitaoka's formula
 - interpolated version, 116, 124
- Kronecker's limit formula, 118
- Kudla's conjectures, 3
- lacunary modular forms, 130
- log-log-form, 53
- main results, 116
- metaplectic group, 78
- mixed Hodge structure, 16, 25, 28
- mixed Shimura datum
 - boundary component, 28
 - boundary morphism, 28
 - conical complex, 30
 - embedding, 26
 - morphism of, 26
 - of Abelian type, 37
 - of Hodge type, 37
 - of orthogonal type, 38
 - of symplectic type, 32
- p -integral, 25
 - structure of, 27
 - p -integral extended compactified, 31
 - p -integral extended, 26
 - reflex field, 43
 - reflex ring, 43
 - unipotent extension of, 27
- mixed Shimura variety, 17
 - boundary strata, 45
 - canonical model, 44
 - canonical model of toroidal
 - compactification, 46
 - canonical model, symplectic type, 61
 - compact dual, 47
 - of symplectic type, 58
- $\text{mod } l$ Galois representation, 130
- modular curve, 11, 118, 123
- modular form
 - orthogonal, 80, 89
 - vector valued, 91
- motive
 - 1-motive, 58
- motives, 16
- orbit equation, 14, 116
- orthogonal modular form
 - bundle of, 80, 89
- p -ECMSD, 31
- p -EMSD, 26
- p -MSD, 25
- P -structure, 35
 - of symplectic type, 36
- parabolic group scheme, 23
 - admissible, 28
- period torsor, 48
- polyhedral cone decomposition, 57
 - concentrated in the unipotent fibre, 32
 - properties, 31
 - rational, 30
- projection on the imaginary part, 29
- proportionality principle, 1, 56
- q -expansion, 65, 68
 - of vector valued modular forms, 91
- q -expansion principle, 68, 72
 - formal, 70
 - theorem, 72
- quasi-parabolic group scheme, 23
- rational polyhedral cone decomposition, 30, 57
 - concentrated in the unipotent fibre, 32
 - properties, 31
- reflex field, 43
 - of Shimura data of orthogonal type, 75
- reflex ring, 43
 - of Shimura data of orthogonal type, 75
- Riemann zeta-function, 135

- root, 21
- roots
 - system of, 21
- Schwartz-Bruhat function, 78
- semilinear representation, 96, 131
- Serre duality, 92
- Shapiro's Lemma, 94
- Shimura curve, 11, 123
- Shimura datum
 - boundary component, 28
 - boundary morphism, 28
 - mixed, 21
 - of Abelian type, 37
 - of Hodge type, 37
 - of orthogonal type, 38
 - of symplectic type, 32
 - p -integral extended compactified mixed, 31
 - p -integral extended mixed, 26
 - p -integral mixed, 25
 - structure of, 27
 - reflex field, 43
 - reflex ring, 43
 - unipotent extension of, 27
- Shimura surface, 11, 123
- Shimura varieties
 - the philosophy of, 16
- Shimura variety, 17
 - arithmetic volume of, 56
 - canonical model, 44
 - canonical model, symplectic type, 61
 - geometric volume of, 56
 - of orthogonal type, 75
 - of symplectic type, 58
- Shimura variety of orthogonal type
 - connected components, 76
 - models of bad reduction, 116
 - special cycles, 75
- Siegel modular form
 - bundle of, 89
- Siegel modular threefold, 11, 123
- Siegel's formula, 10
- Siegel–Weil formula, 119
 - arithmetic version of, 104
 - definite version, 7
 - 'derivative' of, 104
 - indefinite version, 104
- Siegel–Weil theory, 7
- special cycles, 11, 75
 - arithmetic volume of, 117
 - definition of, 76
 - geometric volume of, 117
 - heights of, 117
- spin group scheme, 37
- split group scheme
 - of type (P), 22
- standard principal bundle, 18
 - canonical model, 48
 - symplectic type, 61
- star product, 52
 - estimates of integral, 106
- Tamagawa number, 8, 119
- tautological bundle, 80
- test scheme, 44
- Theta function, 10, 79
 - arithmetic, 10
 - Betti-cohomology valued, 10
 - Chow-group valued, 10
- toroidal compactification
 - canonical model of, 46
 - functoriality, 46
- twisted Siegel modular threefold, 11, 123
- type (P) group scheme, 22
- unipotent extension, 27
- unipotent fibre, 27, 32
- unipotent radical, 22
- vector bundle of vector valued modular forms, 93
- vector valued modular form, 91
 - rationality properties, 93, 95
 - vector bundle of, 93
- volume
 - arithmetic, 2, 54, 56, 117
 - geometric, 1, 56, 117
 - geometric, comparison factor for, 90
- weight morphism, 25
- Weil representation, 78
 - explicit formulas, 78
 - extension to a semilinear representation, 96
 - vector valued modular form w.r.t., 91, 96
- Weyl chamber, 81
- Weyl vector, 81
- Whittaker function, 84
- Whittaker integral, 84