

Index of Notation for Volume 1

- $\langle \xi, v \rangle$: Kronecker product $\xi(v)$, 255
- \preceq, \preceq_2 : (2-)dominance order, 74
- $\xi \cap \theta$: action of dual on Hopf algebra, 255
- $f \sim_l g, f \sim_r g$: $f - g$ is left (right) reducible, 101
- $f \sim g$: $f - g$ is hit, 9
- $v^{(r)}$: r th divided power of v , 165

- $A(d)$: minimal admissible sequence with sum d , 88
- A^t : transpose of matrix A , 169
- A^{op} : opposite algebra of A , 63
- $A|B$: concatenation of blocks, 103
- Ad_ℓ : span of admissibles of length ℓ , 49
- Adm : admissible sequences, 35, 87
- A_2 : mod 2 Steenrod algebra, 34
- $A_2(\lambda)$: Hopf subalgebra of A_2 , 243
- A_2^* : dual Steenrod algebra, 226
- A_2^+ : augmentation ideal of A_2 , 35
- A_2^d : Steenrod operations of degree d , 35
- A_q : mod q Steenrod algebra, 241
- $\alpha(B)$: α -sequence of block B , 42, 70
- $\alpha(d)$: no. of 1s in binary expansion of d , 10
- $\alpha^{\max}(n, d)$: conjugate of $\omega^{\max}(n, d)$, 85
- $\alpha_i(B)$: no. of 1s in i th row of B , 42
- $|A|$: sum of sequence A , 35, 69

- $\text{Bin}(n)$: binary partitions, multiplicities $\leq n$, 72
- Bin^d : binary partitions of d , 67, 72
- $\beta(d)$: $(d + \mu(d))/2$, 88, 236
- $\text{bin}(d)$: 2-powers in binary expansion of d , 10
- $b(X)$: coefficient of Milnor matrix, 55

- $C^{n+d}(n)$: span of Cartan symmetric functions, 218
- $c(R)$: Cartan symmetric function, 41
- $c(n)$: product $x_1 \cdots x_n$, 41, 91
- $c_n(d)$: sum of monomials in $\mathbb{P}^d(n)$ with 2-power exponents, 301
- c : halving map of $\text{DP}(n)$, 177

- $\text{DP}(n)$: divided power algebra, 165
- Dec : (weakly) decreasing sequences, 67
- $\text{Dec}(n)$: decreasing sequences, terms $\leq n$, 69
- Dec_d : decreasing sequences, 2-degree d , 69
- $\Delta_{n,i}$: Vandermonde determinant, 304
- \det : determinant representation, 6
- $D(n)$: Dickson algebra, 297
- $d_{n,i}$: Dickson invariant, degree $2^n - 2^i$, 298, 303
- $\text{deg}_2 B$: 2-degree of block B , 42, 70
- $\text{deg}_2 R$: 2-degree of sequence R , 40, 69
- δ : duplication map, 14
- δ_* : dual of duplication map δ , 179

- η : unit map of algebra, 212
- η_i : conjugate of ξ_i in A_2^* , 230, 283
- ε : counit (augmentation) map, 213
- e_k : elementary symmetric function, 40
- $\text{ex}(\theta)$: excess of $\theta \in A_2$, 28, 91

- \mathbb{F}_2 : field of 2 elements, 2
- $\mathbb{F}_2 M(n)$: monoid algebra, 4
- $\mathbb{F}_2 \text{GL}(n)$: group algebra, 4
- $\text{FL}(n)$: complete flag module, 199
- ϕ : coproduct map, 213

- $\text{GL}(n)$: general linear group, 4
- $\gamma(q)$: highest 2-power in $(2q)!$, 285

- H^* : dual of Hopf algebra H , 224
- $H(n)$: hit polynomials, 9

- h_k : complete homogeneous symmetric function, 40
 $I(\omega)$: set of terms of ω , 69
 $I_2(\omega)$: set of repeated terms of ω , 69
 I_n : identity $n \times n$ matrix, 5
 $l(n)$: 'trivial' representation, 6
 $J(n)$: d-spike module, 175
 $J^\omega(n)$: d-spike submodule of $K^\omega(n)$, 176
 $K(n)$: Steenrod kernel, 174
 $K^\omega(n)$: filtration quotient of $K(n)$, 176
 κ : down Kameko map, 13, 110
 κ_* : dual of Kameko map κ , 177
 L_i : transvection, 7
 $\Lambda^k(n)$: k th exterior power of $V(n)$, 102, 119
 $L(n)$: lower triangular matrices, 191
 λ : partition, 71
 λ^{tr} : conjugate partition, 72
 \leq_l : left lexicographic order, 35
 $\text{len}(A)$: length of sequence A , 35, 69
 M^* : contragredient dual of module M , 189
 M^{tr} : transpose dual of module M , 169, 193
 $M(n)$: $n \times n$ matrices, 4
 Mil^d : sequences $R, Sq(R) \in A_2^d$, 89
 μ : product map of algebra, 212
 $\mu(d)$: minimum no. of $(2^j - 1)$ s with sum d , 27
 Od : odd subalgebra of A_2 , 262
 $\omega(B)$: ω -sequence of block B , 42, 70
 $\omega(d)$: ω -sequence of $d \geq 0$, 26, 70
 $\omega(f)$: ω -sequence of monomial (polynomial) f , 40, 70, 100
 $\omega^{\max}(n, d)$: maximal decreasing sequence of 2-degree d , 85
 $\omega^{\min}(d)$: ω -sequence of minimal spike, 81
 $\omega_i(B)$: no. of 1s in i th column of B , 42
 $P(V, t)$: series $\sum_{d \geq 0} \dim V^d t^d$, 52
 P_i^f : Milnor basis element $Sq_i^{2^f}$, 248
 $P(Y)$: polynomials divisible by variables in Y , 10
 $P(n)$: polynomial algebra, 2
 $P[n]$: power series algebra, 22
 $P^\omega(n)$: span of monomials $f \in P(n)$, $\omega(f) = \omega$, 101
 Part^d : partitions of $d \geq 0$, 67, 71
 p_k : power sum symmetric function, 40
 Q_k : Milnor primitive in A_2 , 50
 $Q(n)$: cohit module, 9
 $Q^\omega(n)$: cohit quotient of $P^\omega(n)$, 101
 $R(X)$: row sequence of Milnor matrix, 54
 $R(d)$: minimal sequence of 2-degree d , 88
 $R[[x_1, \dots, x_n]]$: power series, 20
 R^+ : sequence R prefixed by $n - |R|$, 45
 \leq_r : (reversed) right lexicographic order, 35
 \widehat{r}_k : k th partial 2-degree, 74
 $S(X)$: column sequence of Milnor matrix, 54
 S_i : switch matrix, 7
 $S_{i,j}$: switch matrix, 7
 $Sq(R)$: Milnor basis element, 46
 Sq^k : Steenrod square, 3
 Sq_i^k : k th Steenrod q th power, 238, 269
 $Sq^{[k;d]}$: $Sq^{2^{k-1}d} \dots Sq^{2^d} Sq^d$, 280
 Sq_k : down Steenrod square, 170
 Seq : finite sequences of integers ≥ 0 , 35, 67
 $\text{Seq}(n)$: n -bounded sequences, 69
 Seq^d : sequences of modulus d , 35
 Seq_d : sequences of 2-degree d , 41
 $\text{Spike}(n)$: spike partitions, length $\leq n$, 72
 Spike^d : spike partitions of d , 67, 72
 Sq : total Steenrod square, 2, 61
 $\text{Sq}[u]$: generalized Sq , 59
 Sq_* : total down square, 171
 Sq_q : total Steenrod q th power, 269
 $\sigma^{\min}(d)$: minimal spike partition, 80
 $T(X)$: diagonal sequence of Milnor matrix, 55
 T^k : $Sq(1, 1, \dots, 1)$, 262
 $T_{i,j}$: transvection, 7
 U : standard transvection, 99, 169
 U_i : transvection, 7
 ν : up Kameko map, 13, 110
 ν_* : dual of Kameko map ν , 177
 V : halving map (Verschiebung), 260
 $V(n)$: defining $\mathbb{F}_2\text{GL}(n)$ -module, 5
 W_0 : reversal matrix, 175
 Xq^k : conjugate square, 23
 $Xq^{[k;d]}$: $\chi(Sq^{[k;d]})$, 280
 Xq : total conjugate square, 22, 61
 $Xq[u]$: generalized Xq , 62
 Xq_q : total conjugate q th power, 270
 χ : antipode of Hopf algebra, 216
 χ : conjugation of A_2 , 62
 ξ_k : generator of A_2^* in degree $2^k - 1$, 227
 $Z[n]$: set $\{1, \dots, n\}$, 10

Index for Volume 1

- Adem relations, 34
 - conjugate, 62
- admissible
 - sequence, 35
- admissible monomial
 - in A_2 , 35
- α -count, 124
- α -sequence, 70
- antipode, 216
 - in A_2 , 62
 - in A_2^* , 228
- Arnon
 - bases of A_2 , 249–251
 - order, 246
- augmentation, 213
- Barratt–Miller relations, 237
- bases of A_2
 - P_j^s -bases, 249
 - Y- and Z-bases, 250
- Adams bases, 240
- admissible basis, 45
- Arnon bases, 249–251
- Milnor basis, 46
- Wall basis, 250
- Bausum formula, 65, 287
- β -function, 88, 286
- bialgebra, 216
- block
 - 2-degree of, 70
 - α -sequence of, 42, 70
 - ω -sequence of, 42
 - n -block, 42, 70
 - head, 116, 140
 - normalized, 116
 - normalized, 159
 - range of, 159
 - semi-standard, 132
 - special
 - head, 141
 - tail, 146
 - Sum, 160
 - tail, 114
 - normalized, 115
- boundedness theorem, 124
- Bullett–Macdonald identity, 59, 235
 - conjugate, 62
- Cartan formula
 - for $Sq(R)$, 50
 - for Sq^k , 3
 - for Sq_r^k , 238
 - for Sq_k , 171
 - for Xq^k , 23
- Cartan symmetric function, 41
- Catalan numbers, 30
- χ -trick, 29
- coalgebra, 213
 - cocommutative, 213
 - primitive element of, 213
- coideal, 214
- composition inverse, 21
- composition of a number, 228
- concatenation, 103
- conjugation, 216
 - in A_2 , 62
 - in A_2^* , 228
- coproduct, 168, 213
 - in A_2 , 219
 - in A_2^* , 228
- counit, 213
- d-monomial, 165
- d-spike, 174

- Davis formula, 64
 degree
 of polynomial, 2
 Dickson
 algebra, 297
 block, 316
 invariant, 303
 theorem, 299, 301
 divided power, 166
 algebra $DP(n)$, 165
 dominance
 order, 74
 2-dominance theorem, 281
 dual Steenrod algebra A_2^* , 227
- excess of Steenrod operation, 28
 excess theorem, 280
 exterior power $\Lambda^s(n)$, 119, 183, 192
- Ferrers
 block, 72
 diagram, 71
 flag
 module, 199
- γ -function, 285
- halving map, 260
 head
 block, 116, 140
 class, 116
 sequence, 116
 hit
 equation, 9
 restricted, 105
 polynomial, 9
 problem, 9
 hook-length formula, 136
 Hopf
 algebra, 216
 ideal, 217
 Hung–Nam theorem, 322
 Hung–Peterson polynomials, 301
- Kameko
 map, 13, 110, 177
 kernel
 Steenrod k. $K(n)$, 174
- lattice, 78
 distributive, 78
 Li formula, 229
- map
 d-duplication, 179
 duplication, 14
 Kameko, 13, 110, 177
 matrix
 switch, 7
 transvection, 7
 Milnor
 basis of A_2 , 46
 matrix, 54
 primitive in A_2 , 51
 product formula, 55
 sequence of Sq^A , 44
 module
 cohit, 9
 contragredient dual, 189
 d-spike m. $J(n)$, 175
 defining m. $V(n)$, 5
 flag, 199
 Steinberg, 137
 transpose dual, 169, 193
 monomial
 admissible
 in A_2 , 35
 d-monomial, 165
 d-spike, 174
 spike, 12
 μ -function, 27
 μ^+ - and μ^- -numbers, 286
 multinomial coefficient, 11
- nilpotence height, 254
 number
 2-atomic, 246
- ω -sequence, 26, 40, 70, 100
 order
 2-dominance, 74
 Y -order, 247
 Z -order, 247
 Arnon, 246
 dominance, 74, 246
 left
 on blocks, 68
 on sequences, 35
 partial, 74
 refinement, 77
 right
 on sequences, 35
- partial order, 74
 partition, 71

- binary, 72
- column 2-regular, 72, 243
- conjugate, 72
- minimal spike, 80
- spike, 72
- Peterson conjecture, 29
- Poincaré series, 52
- polynomial
 - algebra $P(n)$, 2
 - hit, 9
 - left reducible, 101
 - right reducible, 101
 - symmetric, 40
- poset, 74, 77
- power series algebra $P[n]$, 22
- preferred row
 - of head block, 116, 140
 - of tail block, 114, 146
- primitive
 - element of A_2^* , 229
 - element of coalgebra, 213
 - Milnor primitive in A_2 , 50
- reducible polynomial, 101
- restricted hit equation, 105
- sequence
 - 2-atomic, 247
 - 2-degree of, 40, 69
 - n -bounded, 69
 - admissible, 35
 - allowable, 258
 - decreasing, 69
 - head, 116
 - length of, 35, 69
 - modulus of, 35, 69
 - size of, 70
 - tail, 114
- Silverman formula, 64
- Silverman–Singer criterion, 281
- spike, 12
 - maximal, 85
 - minimal, 81
- splicing, 108
 - 1-back, 108
 - k -back, 108
- combinatorial, 129
 - multiple 1-back, 128
 - origin of, 108
- squaring operations
 - conjugate square Xq^k , 23
 - down square Sq_k , 170
 - Steenrod square Sq^k , 3
 - total conjugate square Xq , 22
 - total square Sq , 2
- standard transvection U , 5, 99
- Steenrod
 - algebra A_2 , 34
 - conjugate square Xq^k , 23
 - down square Sq_k , 170
 - dual algebra A_2^* , 227
 - kernel $K(n)$, 174
 - operation, 3
 - power Sq_i^k , 238
 - square Sq^k , 3
 - total conjugate square Xq , 22
 - generalized, 62
 - total square Sq , 2
 - generalized, 59
- Steinberg
 - basis of $P(n)$ over $D(n)$, 300
 - module $St(n)$, 137
- Straffin formula, 236
- stripping, 257
- subalgebra of A_2
 - $A_2(\lambda)$, $A_2(n)$, 243
 - A_q , $q = 2^l$, 241
 - odd subalgebra Od , 262
- Sum block, 160
- superposition rule, 173
- tableau
 - Young, 135
- tail
 - block, 114
 - class, 114
 - sequence, 114
- transvection, 7
- Verschiebung, 260
- Wall relations, 236

Index of Notation for Volume 2

- Ad_ℓ : span of admissibles of length ℓ , 146
 $\tilde{\mathbb{A}}_2$: bigraded Steenrod algebra, 235
 $\tilde{\alpha}(B)$: twisted α -sequence of B , 249
- $\mathbf{B}(W)$, $\mathbf{B}(\rho)$: Bruhat subgroup, 10
 $\mathbf{B}(n)$: lower triangular matrices, 8
 $\text{br}(V)$: Brauer character of V , 68
 $\text{br}(V, g)$: value of $\text{br}(V)$ at g , 68
 $\text{br}(V, g, t)$: Brauer character series of graded module, 70
- $\mathbf{C}(n)$: Dickson coinvariants, 84
 $c(n)$: product $x_1 \cdots x_n$, 140
 $\text{cw}(f)$: cyclic weight of f , 243
- \mathbf{DS} : dual of symmetric algebra \mathbf{S} , 223
 $\overline{\mathbf{D}}(n)$: diagonal matrices in $\overline{\mathbf{G}}(n)$, 97
 $\Delta(Y)$: top Dickson invariant in $\mathbf{P}(Y)$, 118
 $\Delta(\lambda, n)$, $\nabla(\lambda, n)$: Weyl (dual Weyl) module for $\text{GL}(n)$, 89, 105
 Δ_I : product of top Dickson invariants, 89
 Δ_n : top Dickson invariant $\mathbf{d}_{n,0}$, 118
 $\overline{\Delta}(\lambda, n)$, $\overline{\nabla}(\lambda, n)$: Weyl (dual Weyl) module for $\overline{\mathbf{G}}(n)$, 104, 105
 $\mathbf{D}(n)$: Dickson algebra, 84
 $\text{des}(\rho)$: descents of permutation ρ , 3
 $\widetilde{\mathbf{DP}}(n)$: twisted divided power module, 265
- $e(n)$, $e'(n)$: Steinberg idempotents, 60, 62
 e_I : element $\iota(h_I)$ of $\mathbf{H}_0(n)$, 39
 e_k : elementary symmetric function, 97, 217
- F : Frobenius automorphism of \mathbb{F}_{2^n} , 242
 $F^\omega(\rho)$: zip array, 166, 187
 \mathbb{F}_{2^n} : field of 2^n elements, 242
 $\text{FL}^I(n)$: partial flag module, 15
- $\text{FL}_I(n)$: indecomposable summand of $\text{FL}(n)$, 21
 $\overline{\mathbb{F}}_2$: algebraic closure of \mathbb{F}_2 , 96
 ϕ^ω : Crabb–Hubbuck map, 161
 f_W : basis element of $\mathbf{H}_0(n)$, 32
- G'_p : elements of order prime to p , 67
 $\overline{\mathbf{G}}(n)$: algebraic group $\text{GL}(n, \overline{\mathbb{F}}_2)$, 96
 g_I : element $e_{-I}h_I$ of $\mathbf{H}_0(n)$, 39
- $\mathbf{H}_0(n)$: Hecke algebra of $\text{FL}(n)$, 32
 h_i : generator f_{S_i} of $\mathbf{H}_0(n)$, 32
 h_k : complete homogeneous symmetric function, 97
- $-I$: complement of I in $Z[n-1]$, 37
 $I_2(\omega)$: set of repeated terms of ω , 172
 $\text{inv}(\rho)$: inversions of permutation ρ , 3
 ι : involution of $\mathbf{H}_0(n)$, 35
 ι' : embedding of $\mathbf{H}_0(n)$ in $\mathbb{F}_2\text{GL}(n)$, 63
 ι_n : identity permutation, 160
- $\widetilde{\mathbf{J}}(n)$: twisted d-spike module, 267
- $\mathbf{K}(\mathbf{DS})$: symmetric Steenrod kernel, 225
 $\mathbf{k}(\rho)$, $\mathbf{k}'(\rho)$: (sub)key monomial, 124
 κ_* : dual of Kameko map κ , 221
 $\widetilde{\mathbf{K}}(n)$: twisted Steenrod kernel, 265
 $\tilde{\kappa}_*$: twisted dual up Kameko map, 276
- $L(\lambda)$: irreducible $\mathbb{F}_2\text{GL}(n)$ -module, 49
 L_I : transvection, 61, 63, 162
 $\overline{\Lambda}^k(n)$: k th exterior power of $\overline{\mathbf{V}}(n)$, 97
 $\overline{L}(\lambda)$: irreducible $\overline{\mathbf{G}}(n)$ -module with highest weight λ , 98
- M^* : contragredient dual of module M , 23

- M^{tr} : transpose dual of module M , 23
 $\text{MP}(n)$: Mitchell–Priddy module, 147
 $m(\lambda)$: monomial symmetric function, 98
 $P(M, \lambda, t)$: Poincaré series for $L(\lambda)$ in M , 71
 $\text{P}(\text{St}(n))$: Steinberg summand of $\text{P}(n)$, 138
 $\text{P}(n, \lambda)$: A_2 -summand of $\text{P}(n)$ for module $L(\lambda)$, 76, 132
 P^l : lower parabolic subgroup, 15
 $\overline{\text{P}}(n)$: polynomial algebra over field $\overline{\mathbb{F}}_2$, 97
 $\overline{\text{P}}^\omega(n)$: span of monomials $f \in \overline{\text{P}}(n)$, $\omega(f) = \omega$, 100
 $\Pi(M, t)$: Poincaré series of M , 70
 $\leq p$: positive order, 126
 $\overline{\text{P}}(n)$: $\text{P}(n)$ with twisted A_2 -action, 243
 $\tilde{\text{P}}(n, j)$: span of monomials of cyclic weight j , 243
 $\tilde{\text{Q}}(n, j)$: cohit quotient of $\tilde{\text{P}}(n, j)$, 245
 R, R^l : reference (partial) flag, 12, 15
 $R_2(G)$: representation ring of G , 70
 $\text{R}(n)$: rational functions over $\overline{\mathbb{F}}_2$, 140
 ρ_0 : reversal permutation, 3, 35
 $\text{rad}(U)$: radical of module U , 57
 $ST^\omega(\rho)$: spike ρ -tableau, 167
 $S^\omega(\rho)$: spike block, 160
 S_i : switch matrix, 3, 11, 32
 $S_{i,j}$: switch matrix, 3
 $\text{DS}(n)$: subcoalgebra of DS dual to $\text{S}(n)$, 224
 $\text{S}, \text{S}(n)$: algebra of symmetric functions (polynomials), 204, 222
 $\text{SF}^d(n)$: spike-free module, 315
 $\tilde{S}q^k$: Steenrod square in \tilde{A}_2 , 235
 $\text{Sch}(W), \text{Sch}(\rho)$: Schubert cell, 13
 $\text{Sch}(n)$: Schubert monoid, 33
 $\Sigma(n)$: permutations of $1, 2, \dots, n$, 2
 $\Sigma(r_1, \dots, r_n)$: symmetrized spike, 152
 Sq : total Steenrod square, 141
 $\text{St}(n)$: Steinberg module, 48
 $\sigma_G(f)$: G -orbit sum of f , 204
 σ_W : sum of flags in $\text{Sch}(W)$, 14, 32
 $\sigma_d(j)$: sum of d -monomials of cyclic weight j , 266
 $\sigma_n(f)$: monomial symmetric function containing f , 204
 s_I : projection of $\text{FL}(n)$ on an irreducible submodule, 43
 $\text{T}(n)$: A_2 -module generated by Laurent monomial $(x_1 \cdots x_n)^{-1}$, 143
 $\text{tr}(I)$: all j with $n - j \in I$, 22, 178
 $U(\lambda)$: principal indecomposable module, 58
 $U(n)$: upper triangular matrices, 63
 ν : up Kameko map, 209
 ν_* : dual of Kameko map ν , 221
 $\tilde{\nu}$: twisted up Kameko map, 250
 $V(n)$: Mui algebra, 88
 V^I : permutation matrix $W_0^I W_0$, 37
 V_λ : λ -weight space of $\overline{\mathbb{G}}(n)$ -module V , 97
 V_k : k th Mui invariant, 88
 W_0 : reversal matrix, 3, 35
 W_0^I : block reversal matrix, 36
 $W(n)$: permutation matrices, 2
 $W^I(n)$: subgroup of $W(n)$ generated by S_i , $i \notin I$, 17
 $w(n)$: $\sum_{i=1}^n (2^i - 1) = 2^{n+1} - n - 2$, 78
 $\text{ch}(V)$: formal character of V , 97
 $Z^\omega(\rho)$: zip block, 163
 ζ : generator of $\overline{\mathbb{F}}_{2^n}^*$, 242
 $z^\omega(\rho)$: zip monomial, 175
 $z_\omega(\rho)$: zip d -monomial, 164

Index for Volume 2

- admissible
 - monomial
 - in \tilde{A}_2 , 238
- algebraic group $\overline{G}(n)$, 96
- bideterminant, 89
- block
 - diagonal form of, 248
 - last row type of, 309
 - zip, 163
- Brauer character, 68
 - series, 70
- Bruhat
 - cell, 9
 - decomposition, 9
 - order, 6
 - subgroup, 10
- Cartan formula
 - for $\tilde{S}q^k$, 236
 - in DS, 224
- coinvariant, 84
- cyclic
 - summands of $\tilde{P}(n)$, 243
- d-polynomial
 - flag, 161
- defining module $V(n)$, 2
- degree
 - 1-, 2-dominant, 158
- Dickson
 - algebra, 84
- flag
 - complete, 12
 - partial, 15
 - reference, 12
- Hecke algebra $H_0(n)$, 32
- idempotent
 - orthogonal, 55
 - primitive, 55
 - Steinberg, 60
 - conjugate, 62
- Kameko
 - conjecture, 202
 - map, 209, 225
- kernel
 - symmetric Steenrod k., 225
- Laurent polynomial ring, 140, 142
- map
 - Crabb–Hubbuck, 161
 - Kameko, 209, 225
- matrix
 - permutation, 2
 - length of, 3
- Mitchell–Priddy
 - module, 147
 - theorem, 148
- module
 - contragredient dual, 23
 - d-spike m. $J(n)$, 158
 - flag
 - partial, 15
 - indecomposable, 53
 - principal, 56
 - irreducible, 53
 - absolutely, 54
 - Mitchell–Priddy, 147
 - Steinberg, 48
 - transpose dual, 22

346

Index for Volume 2

module (*Cont.*)
 twisted A_2 -m. $\tilde{P}(n)$, 243
 Weyl, 104
 monomial
 admissible
 in \tilde{A}_2 , 238
 cone, 147
 key, subkey, 124
 zip, 175
 Mui algebra, 88
 Nam theorem, 193
 Norton basis of $H_0(n)$, 41
 number
 composition of, 16
 order
 Bruhat, 6
 parabolic subgroup, 15
 partition
 column 2-regular, 49
 permutation
 descent of, 3
 inversion of, 3
 Peterson conjecture, 207
 polynomial
 flag, 175
 strongly spike-free, 315
 primitive
 idempotent, 55
 rational function algebra, 140
 reduced word, 5, 34
 representation ring, 70
 ρ -factorization, 166
 root-generated, 121
 Schubert

cell, 13, 19
 monoid, 33
 length in, 34
 spike
 b -spike, 225
 symmetrized, 152
 splitting field, 54
 Steenrod
 big(raded) algebra \tilde{A}_2 , 235
 big(raded) square $\tilde{S}q^a$, 236
 symmetric kernel, 225
 total big(raded) square $\tilde{S}q$, 236
 Steinberg
 idempotent $e(n)$, 60
 module $St(n)$, 48
 tensor product theorem, 99
 tableau
 ρ -, 167
 spike ρ -, 167
 transpose set, 22, 178
 twisted
 α -sequence, 249
 d-spike module, 267
 divided power module, 265
 Kameko map, 250, 276
 module $\tilde{P}(n)$, 243
 Steenrod kernel, 265
 Weyl
 dual Weyl module, 89
 Weyl module, 104
 Wu formula, 217
 zip
 array, 166, 184, 187
 block, 163
 d-monomial, 164, 184
 monomial, 175