

Index

- algebra 21
 - , automorphism of 22
 - , Clifford 9, 23, 40, 56, 190
 - , division 200, 301
 - , exterior 40
 - , Lie 95
 - , opposite 175, 202
 - , simple 202
- alternation 194
- alternative 200, 301
- automorphism
 - , similar 31
- basis 3
 - , orthonormal 7
 - , standard 4
- bilinear 21
 - covariants 137, 142
- bivector 8
 - , opposite 34
 - , simple 87
 - , unit 25, 34
- Brauer group 202
- Brauer-Wall group 239
- Brauer-Wall-Porteous group 240
- Cartan map 63
- Cartan's principle of triality 308
- Cayley-Dickson process 285, 302
- Cayley algebra 200, 303
- Cayley transform 222
- center 55
- charge conjugation 162, 168
- Clifford
 - algebra 9, 26, 40, 53, 190
 - conjugate 29, 56, 86
 - dual 39
 - product 9, 41, 189
- combination
 - , linear 6
- companion 307, 317
- complex
 - conjugate 18
 - number 18
- conjugate
 - , charge 162, 168
 - , Clifford- 29, 56, 86
 - , complex 18
 - , quaternion 69
- contraction 44, 46
- coordinate 3, 6
- cover(ing)
 - , two-fold 30
- Crawford 152, 156
- cross product 37, 93
- dimension 6
 - grading 42

Dirac

- adjoint 136, 139
- current 136
- equation 135, 136
- Hestenes equation 144
- matrices 135

directed line segment 1

division

- algebra 200, 301
- ring 61, 232

dual

- ,Clifford 39
- ,Hodge 38

endomorphism 6

energy

- ,kinetic 50
- projection operator 138
- ,total 50

equation

- ,Dirac 136
- ,Maxwell 101
- ,Schrödinger 50

Euclidean

- plane 7
- space 93

exterior

- algebra 40
- product 10, 34

even

- part 28
- subalgebra

field 21

- ,automorphism of 22
- ,ordering of 31

function

- ,linear 5
- ,right linear 73

grade involution 29, 86

graded tensor product 202

grading

- ,dimension 42

group

- ,Brauer 202
- ,Brauer-Wall-Porteous 240
- ,Lorentz 124
- ,spin 220

helicity 164

Hestenes 149

- ,Dirac-Hestenes equation 144

Hodge dual 38

hyperbolic plane 196

ideal

- ,left 52, 60
 - ,minimal 60
- idempotent 52, 60
- ,lattice of 227
 - ,primitive 52, 61, 138, 164, 226

imaginary part 18

inverse quaternion 70

involution 56

- ,grade 29, 56, 86
- ,parity 169

irreducible

- components 53
- fields 260
- left ideal 213
- representation 228, 232
- tensor 113

isoclinic 89, 310

isotropic 196

 KS -transformation 148Kustaanheimo-Stiefel = KS 63

- left ideal 52, 60
 - ,graded 213
 - ,irreducible 213
 - ,minimal 52, 60, 226
- Lie algebra 95
- linear
 - combination 6
 - function 5
 - isomorphism 6
 - ,right 73
 - space 5
 - structure 5
- linearly independent 6
- Lorentz
 - force 100
 - group 124
 - invariants 123
 - transformation 120
- Lorenz
 - condition 106
 - gauge 106
- map, see function
- mapping, see function
- matrix
 - ,Pauli spin 51, 73
- Maxwell equations 101
- metric 8
- minimal left ideal 52, 60, 226
- Minkowski space-time 102, 121
- multivector structure 43
- negative 31
- neutral
 - axis 315
 - quadratic space 195
- norm 8, 19, 36, 37, 70
- null = isotropic 196
- number 20
 - ,complex 18
 - ,negative 31
 - ,positive 31
- octonion 97, 303
- odd part 28
- opposite
 - algebra 175, 202
 - bivector 34
 - metric 174
 - product 318
 - vector 2
- ordering 31
- parity involution 169
- part
 - ,even 28
 - ,odd 28
- Pauli
 - Dirac representation 136
 - spin matrices 51, 73
 - spinor 52, 60
- polar form 19
- positive 31
- product
 - ,Clifford 9
 - ,cross 37
 - ,exterior 10, 34
 - ,graded tensor 202
 - ,scalar 7, 92
 - of spinors 233
- quadratic
 - form 195
 - ,neutral 196
 - space 93, 195
- quaternion 68
 - conjugate 69

- real
 - part 10
 - structure 139
- representation
 - ,faithful 228
 - ,irreducible 228
 - ,Pauli-Dirac 136
- reversion 28, 56, 86
- rotation
 - ,isoclinic 89, 310
 - ,simple 89
- Rodrigues formula 58, 71
- scalar 1
 - product 7, 92
 - of spinors 223
- Schrödinger equation 50
 - Pauli equation 64
- similar 31
- simple
 - Clifford algebra 228
 - bivector 87
 - rotation 89
- space
 - ,Euclidean 93
 - ,linear 5
 - ,quadratic 93, 195
- span 6
- spin 50
 - group 30, 59, 220
 - projection operator 138
- spinor
 - ,column 138
 - ,Dirac 164, 167
 - ,even 228
 - ,ideal 138
 - ,Majorana 163
 - operator 63, 143, 145
 - ,Pauli 52, 60
 - ,recovery of 155
- regularization 63
- representation 53
 - ,semi- 228
 - space 61
 - ,Weyl 164
- spinoriality 169
- standard basis 4
- structure
 - ,complex 139
 - ,linear 5
 - ,multivector 43
 - ,real 139
- tensor product 197, 201
- time reversal 169
 - ,Wigner 169
- triality 306, 309
 - ,Cartan's principle of 308
 - triplet 308
- two-fold 30
- unit
 - bivector 25, 34
 - circle 67
 - vector 2
- universal 192
- vector 1, 5
 - space 4
 - ,unit 2
- Witt
 - index 196
 - ring 198