

Index

- absolutely continuous, 163
- addition theorem, 186
- affine isometry, 192
- Aleksandrov problem, 191–193, 219–221
- Aleksandrov–Rassias problem, 191, 199, 200, 215
- algebra homomorphism, 102
- algebraic manifold, 140
- approximately additive mapping, 39
- approximation error estimates, 159
- arithmetic-geometric mean of Gauss, 150
- associativity, 177

- B*-quadratic mapping, 3
- B_{sa}*-quadratic mapping, 7
- Banach algebra, 2, 91, 93, 100–102, 180
- Banach module, 1, 93
- bordism group, 141
- Borel measure, 160

- C**-algebra, 93, 100
- Cartan distribution, 141
- Cauchy characteristic distribution, 141
- Cauchy functional equation, 183, 184
- Cauchy problem, 141
- Cauchy type functional equation, 74
- Cauchy–Pexider functional equation, 183
- Cauchy–Schwarz inequality, 205, 212
- Cauchy operator, 11
- Čebyšev inequality, 22, 31
- character, 172
- characteristic distribution, 140
- characteristic vector field, 146
- commutative discrete hypergroup, 179
- compact manifold, 145
- conservative distance, 192
- contractive distance, 204
- convolution, 167, 169

- Δ operator, 11, 16
- distance one preserving property, 192
- DJS-hypergroup, 168
- Dragomir–Agarwal inequalities, 105
- dual Euler–Simpson formula, 125, 126

- (ε, p) -isometry, 198
- Einstein’s special theory of relativity, 187
- entire function, 184
- equilateral triangle, 195
- Euclidean structure, 146
- Euclidean transformation, 194
- Euler formula, 105
- Euler midpoint formula, 114–116
- Euler trapezoidal formula, 114
- Euler two-point formula, 121, 123, 136
- Euler–Maclaurin formula, 132, 134, 136
- Euler–Simpson $3/8$ formula, 129, 130, 136
- Euler–Simpson formula, 118, 119, 136
- evaluation, 173
- everywhere dense set, 194
- exponential, 171
- exponential monomial, 172
- exponential polynomial, 172
- extensive distance, 204

- fiber bundle, 141
- flow, 139
- fluid, 144
- formal integrability, 140
- Fubini theorem, 161
- functional Navier–Stokes equation, 139, 146

- Galilean affine fiber bundle, 140
- Galilean space-time, 139, 140
- Gauss functional equation, 151
- Gauss type functional equation, 149
- Gauss’ functional equation, 150
- generalized Δ -equation, 17
- generalized Cauchy functional equation, 183, 185
- geodesic completeness, 144
- global laminar solution, 146
- global solution, 142

- Hausdorff group, 168
- Hermitian hypergroup, 168, 170
- Hilbert space, 159
- Hyers–Rassias theorem, 40

- Hyers–Ulam sequence, 65, 147
 Hyers–Ulam–Rassias, 1
 Hyers–Ulam–Rassias stability, 9, 10, 12, 39, 40,
 64, 67, 68, 70, 71, 91, 93, 101, 143
 Hyers–Ulam–Rassias theorem, 2
 hyperbolic geometry, 187
 hypergroup, 167, 168, 177
- identity, 168
 incompressible fluid, 139
 inertial frame, 140
 infinite sequence, 194
 injective mapping, 192
 inner product, 164
 integral bordism group, 141
 integral manifold, 141
 integral mean, 150, 154
 integral transform, 161
 internal energy, 140
 invariant mean, 179
 involution, 168
 isometric identity, 161, 164
 isometry, 162, 191, 198, 199, 203, 206–211,
 215, 217–220
 isotropic pressure field, 140
- Jensen operator, 15
 jet-derivative space, 139
- Kronecker delta, 186, 194
 Kronecker theorem, 73, 74
- Lebesgue integral, 26
 left translation operator, 169
 Legendre hypergroup, 171
 Legendre polynomials, 171
 Lehmer means, 150
 linear isometry, 206
 linearization coefficients, 170
 linearization formula, 170
 Lipschitz mapping, 196–198
 locally compact Hausdorff semigroup, 168
 locally compact Hausdorff space, 167
- Markov–Kakutani fixed point theorem, 179
 Mazur–Ulam theorem, 191, 220, 221
 mean value theorem, 149
 measure, 178
 median principle, 21, 23, 25, 27, 28
 Mercer kernel, 162
 Michael topology, 168
 Minkowski inequality, 89
 moment function, 175
 moment sequence, 175
- non-isothermal Navier–Stokes equation, 139
 normed vector space, 192
- order jet-derivative space, 139
 orthogonal polynomials, 170
 Ostrowski inequality, 22, 30–32
- parallelogram, 209
 Peano kernel, 22
 Pexider equation, 16, 40
 Pexider operator, 11
 Pexiderized quadratic equation, 45
 Pexiderized quadratic functional equation, 41
 polynomial hypergroup, 170, 172, 174
 Popoviciu functional equation, 91–93, 100
 positive compact operator, 159
 probability measure, 167, 170
 projected flow, 145
- quadratic function, 40
 quadratic operator, 11, 15
 quadrature rule, 21
- Rassias approach, 40
 Rassias problem, 195, 198, 221
 regular solution, 141
 reproducing kernel, 159, 160
 Riemannian manifold, 143
 Riemannian metric, 143
 Riemannian structure, 143
 right translation operator, 168
 ring homomorphism, 100
- sectional topology, 141
 Smale–Zhou formula, 159
 smooth solution, 142
 square integrable function, 160
 strictly convex normed space, 192
 strongly distance one preserving property, 192
 subadditivity, 75
 superstable, 139, 143
- Tchebycheff hypergroup, 175
 temperature field, 140
 thermal conductivity, 140
 trapezoid inequality, 32
 triangle inequality, 205
 Trif theorem, 93
 tunnel effects, 145
- Ulam stability, 139, 142, 144
 Ulam–extended superstability, 144
- viscosity, 140
- Wigner theorem, 221
- Navier–Stokes equation, 139, 141, 143–145