Index

angular diameter distance, 11
apparent luminosity, 12
axion, 268

BAO, 169, 341
bend angle, 178
Boltzmann equation, 112

CDM, 188
chamaleon mechanism, 360
chaotic inflation, 37
Chaplygin gas, 364
chemical potentials of leptons, 14
CMB, 135, 145, 247, 338
map, 148
polarization, 135
anisotropies, 135
comoving observers, 7
conformal time, 6
cosmic acceleration, 331
cosmic coincidence problem, 25
cosmic time, 6
cosmological Constant, 342
cosmological parameters, 134
cosmological perturbations
backreaction, 387
dark energy, 331
coupled, 354
dynamical models, 25
lensing, 206
dark gravity, 208
dark matter, 241, 248
cosmic rays, 256
lensing, 185
overdensity field, 155
deceleration parameter, 25
density parameter, 23
DGP model, 381
distance modulus, 24
electroweak, 273
entropy, 15–17, 232
Eulerian methods, 233
expansion rate, 8
exponential expansion, 30
fermion mass
Dirac, 279
Majorana, 279
Friedmann equation, 9
Friedmann-Lemaître-Robertson-Walker spacetimes, 6
galactic rotation curves, 242
galaxy clusters, 244
Gauss-Bonnet models, 375
gravitational waves, 80
stochastic background, 85
horizon problem, 27
Hubble
comoving length, 33
diagram, 22
length, 32
hydrodynamical codes, 228
inflation
power-law, 35
slow-roll approximation, 35
testing, 139
inhomogeneous Lemaître-Tolman-Bondi model, 385
initial quantum fluctuations, 27
Jeans criterion, 56
k-essence, 351
large scale structure, 154
large scale structures, 247
lens
  amplification, 181
  equation, 180
  magnification, 181
  thin, 182
lensing, 177, 245
  3D, 199
  cosmological, 189
  potential, 191
lepton number, 277
magnitude
  absolute, 24
  apparent, 24
  redshift relation, 24
mass density, 221
matter-radiation equality, 18
Minimal Supersymmetric Standard Model (MSSM), 286
modified gravity, 366
N-body codes, 218
neutralino, 286
neutrino, 277
  sterile, 267
neutrino temperature, 17
number of causality distances, 29
Palatini gravity, 374
Particle-Mesh method, 221
Particle-Particle method, 219
perturbation
  adiabatic, 101
  isocurvature, 101
  theory, 38–48, 138
power spectrum, 71, 193
density fluctuation, 78
inflaton, 71
matter, 194
power law inflation, 73
slow roll, 75
small scale, 262
proper-motion distance, 11
quintessence, 346
quintessence models, 26
R parity, 286
redshift, 10
reheating time, 30
scalar field models, 33
  perturbation, 61
scalar-tensor models, 377
scale factor, 6
see-saw mechanism, 267, 283
selection function, 162
shear, 184
  ratio test, 203
SPH, 229
standard cosmological model beyond, 143
Standard Model (SM)
  fermion masses, 280
  gauge boson masses, 279
supernovae Ia, 333
ttre codes, 224
universe
  observable, 28
vacuum-like energy, 29
WIMPs, 250
  direct detection, 253
WMAP, 137, 140