

## Index

- absorption 41, 51, 55
- absorption line 41
- accumulation time 49
- amplifier 195
- anticorrelations 118
- arrival time of photons 48
  
- beam–foil technique 59, 70
- beats 37, 47, 54, 77, 93, 100
- Bernoulli transformation 90
- Bohr's atoms model 42
- Bose–Einstein distribution 137, 145
  
- Casimir force 36
- cavity radiation 88
- coherence volume 37
- coincidence count rate 140, 184
- coincidences 120, 121, 132, 139, 147, 184
  - delayed 48, 135, 137, 144, 149
- collision, inelastic 68, 75
- collision broadening 68
- correspondence principle 226
- count rate of a detector 140
  
- decay law, exponential 61, 75
- dipole moment, electric 22, 31, 52, 79, 141
  
- emission line 25, 41
- energy density of the electromagnetic field 18, 39
- energy flow 18, 52, 53
- energy flux density 18
- exit work 14
  
- Fabry–Perot interferometer 26
- frequency measurement on photons 70, 96
  
- Glauber  $P$  representation 225
- Glauber state 39, 224
- guiding wave 96
  
- harmonics generation 151
- Hertz dipole 22
  
- image converter 46
- induced emission 141
- intensity correlations 130, 134
  - spatial 47, 108, 117
  - time 47, 134
- intensity of light 19, 46, 73
- interference fringes 10, 99
- interference phenomena 9
  
- laser radiation 141
- light pressure 84
  
- Mach–Zehnder interferometer 97
- Mandel's  $Q$  parameter 141
- Michelson interferometer 91
- micromaser 152
- mode of the field 33, 36
- momentum of a photon 84
  
- needle radiation 85
- non-objectifiability 183, 194, 204
  
- one-atom maser 152
- optical homodyne tomography 175
- optical mixer 121
  
- parametric amplification, degenerate 157
- perception 50
- phase distribution 166, 168
- phase matching condition 80
- phase state 165
- photocell 44
- photodetector 45
- photoeffect 12, 48, 56
- photography 43
- photomultiplier 44
- photon 14, 35, 37, 57, 71, 74, 78, 82, 87
- photon antibunching 145, 148, 153
- photon bunching 134
- photon number 38, 105, 118, 137, 146, 193
- photon pair 80, 83, 120, 177, 183, 187, 203
- Poisson distribution 40, 138, 143

- polarization state of a photon 182, 195, 204  
 Poynting relation 17  
 Poynting vector 18, 23  
 pressure-broadened spectral lines 65, 68  
 pseudothermal light 139
- Q*-function 168, 170  
 quantum beats 77  
 quantum jump 61, 62  
 quantum Zeno paradox 32  
 quasiprobability distribution 170, 171
- Rayleigh scattering 24  
 recoil of an atom 108  
 resonance fluorescence 61, 148, 150  
 resonance frequency, atomic 42, 49, 72  
 resonator 66  
 resonator eigenoscillation 33
- scattered light 136, 139  
 secondary electron multiplication 44  
 shot noise 163  
 spin of a photon 85  
 squeezed vacuum 158  
 squeezing 157, 158, 162  
 stellar interferometer  
   Hanbury Brown–Twiss 130  
   Michelson 127, 130
- streak camera 46  
 subharmonic generation 158  
 sub-Poissonian statistics 148, 152  
 superposition principle 21, 32  
 synchrotron radiation 93
- teleportation 207  
 thermal light 131, 134, 137, 141  
 three-wave interaction 79  
 time of flight broadening 27  
 total photon angular momentum 86  
 two-photon absorber 150
- uncertainty relation  
   phase and quantum number 106  
   time and energy 27
- vacuum fluctuations 38, 82, 107, 167  
 vacuum state 35, 38, 162  
 Vernam code 202  
 visibility of an interference pattern 92, 129
- Weisskopf–Wigner theory 71  
 Wigner function 169, 174
- Young’s interference experiment 9, 108
- zero point energy 35