## Contents

Preface	vii
Quantum theory of measurement <i>W</i> Lamb	1
Cavity QED: Probing the vacuum field noise in confined space	15
S Haroche	
The statistical properties of squeezed light and its phase-dependent interaction with atoms	34
F A M De Oliveira, P L Knight, G M Palma and A K Ekert	
The optical parametric oscillator: a model system for quantum noise reduction <i>C</i> Fabre, <i>E</i> Giacobino, <i>A</i> Heidmann, <i>S</i> Reynaud and <i>T</i> Debuisschert	75
Lasing without inversion via the lambda quantum beat laser	93
M 0 Scully	
Spatial structures in lasers and cooperative frequency locking LA Lugiato F Prati L M Narducci G-L Oppo and LR Tredicce	103
Noise-sustained structures, confined states and convective instability H R Brand and R J Deissler	125
Diffusion-limited A + B $\rightarrow 0$ reaction: spontaneous segregation	142
K Lindenberg, B J West and R Kopelman	
Path integral approach to the colored noise problem M San Miguel, P Colet H S Wio, L Pesquera and M A Rodriguez	172
Dissipative quantum tunneling at finite temperatures <b>P</b> Hanggi	187
Testing approximate theories of colored noise <b><i>R.F. Fox</i></b>	207
Spatial chaos and selfsimilarity in developed turbulence <b>S</b> Grossmann	228

Chaotic dynamics and Markovian coarse-graining in nonlinear dynamical systems G <i>Nicolis</i>	241
Transient statistical dynamics of lasers <b><i>FT</i> Arecchi</b>	261
Chaos for cyclists <i>P Cvitanovic</i>	270
From chaos to symmetry G M Zaslavsky	289
Index	313