

## CONTENTS

Preface	v
<b>1 ATOMIC AND MOLECULAR SPECTROSCOPY</b>	<b>1</b>
1.1 Investigations of Excited Atoms by Fluorescence Spectroscopy <i>M. Baumann</i>	3
1.2 Doppler-Free Multiphoton Spectroscopy: Applications to Hydrogen and Rydberg Constant <i>B. Cagnac</i>	43
1.3 Laser Spectroscopy of Fast Ion Beams <i>R. Hallin, A. Arnesen, C. Nordling, O. Vogel &amp; A. Wännström</i>	50
1.4 Radiative Lifetime Measurements of the Excited Atomic and Ionic States <i>K. Blagoev</i>	63
1.5 Parity Nonconservation in Atoms and Molecules <i>I. B. Khriplovich</i>	81
1.6 Far Infrared Laser Spectroscopy of Atoms and Molecules <i>M. Inguscio</i>	97
1.7 High Resolution Laser Spectroscopy in Molecular Beams <i>W. Demtröder</i>	125
1.8 The Influence of Spectroscopic Parameters on Lasing Properties of Some Anthracene Derivatives <i>H.-G. Löhmansröben</i>	155
<b>2 NEW SPECTROSCOPIC METHODS AND PHENOMENON</b>	<b>177</b>
2.1 Rate Equations for Light-Induced Drift <i>J. E. M. Haverkort &amp; J. P. Woerdman</i>	179
2.2 Experiments on Laser Excited Alkali Vapors <i>M. Allegrini</i>	210

2.3	Principles of Continuous Wave Metal Vapour Lasers <i>H. H. Telle</i>	234
2.4	High Resolution Spectroscopy with Unconventional Detection <i>K. Ernst</i>	273
2.5	Approaches to Quantum Dynamically Complete Atomic Collision Experiments <i>H. Kleinpoppen</i>	286
3	<b>NONLINEAR OPTICS</b>	343
3.1	Studies of Rydberg Atoms Using Spectral Profiles in Sum Frequency Generation <i>A. Schnitzer &amp; W. Behmenburg</i>	345
3.2	Two-Photon Effects in Gas Lasers <i>M. Kolwas</i>	347
3.3	Ways and Methods of Generating Stimulated Raman Emission from Low Power Lasers in Compressed Hydrogen <i>P. A. Apanasevich &amp; V. A. Orlovich</i>	360
4	<b>QUANTUM OPTICS AND CHAOS</b>	409
4.1	Physical Interpretation of Operator Dynamics in the Jaynes-Cummings Model <i>A. Bandilla &amp; H.-H. Ritze</i>	411
4.2	Transient Chaos and Noise Effects in Nonlinear Optical Cavities <i>P. Belkner, K. Germey, M. Mareyen, F.-J. Schütte &amp; R. Tiebel</i>	423
4.3	Stochastic Ionization in Microwave Fields <i>G. von Oppen</i>	438
4.4	Quantum Noise Reduction by Squeezing — an Experimentalist's View <i>H.-A. Bachor</i>	453

<b>5</b>	<b>LIST OF PRESENTED POSTERS</b>	<b>471</b>
<b>6</b>	<b>LIST OF PARTICIPANTS</b>	<b>473</b>