

CONTENTS

Conference Opening	1
Kai Siegbahn	
Dynamics of Resonant States	5
U. Fano	
Impact of Atomic Physics on Fundamental Constants	23
Richard D. Deslattes	
The Quantum Hall Effect	43
Klaus v. Klitzing	
Sub-Doppler Spectroscopy	55
T.W. Hänsch	
Doppler Narrowing and Collision-Induced Zeeman	
Coherence in Four-Wave Light Mixing	71
N. Bloembergen, M.C. Downer and L.J. Rothberg	
Excitation of the Positronium $1^3S_1 - 2^3S_1$ Two Photon	
Transition	83
Allen P. Mills, Jr. and Steven Chu	
Experimental Tests of Bell's Inequalities in Atomic	
Physics	103
Alain Aspect	
Relativistic Effects in Many-Body Systems	129
Lloyd Armstrong, Jr.	
Relativistic Many-Body Calculations	149
Walter R. Johnson	
One- and Two-Electron Systems	171
G.W.F. Drake	

New Results on Muonium and Muonic Helium	197
Michael Gladisch	
Structure and Dynamics of Atoms Probed by Inner-Shell Ionization	213
Werner Mehlhorn	
Some Current Problems in Electron Spectroscopy	243
Kai Siegbahn	
Collective Effects in Isolated Atoms (Many-Body Aspects of Photoionization Process)	287
M.Ya. Amusia	
Many Body Calculations of Photoionization	305
Hugh P. Kelly	
A Time-Dependent Local Density Approximation of Atomic Photoionization	339
A. Zangwill	
Shape Resonances in the Photoionization Spectra of Free and Chemisorbed Molecules	355
Torgny Gustafsson	
Atomic Collisions in the High Energy Regime	369
Sheldon Datz	
Heavy Particle Collisions	395
Larry Spruch and Robin Shakeshaft	
Light Scattering as a Probe for Atomic Interactions	415
Keith Burnett	
Electron-Photon Correlation Studies of Spin Exchange, Spin Orbit and Quantum Beats	431
H. Kleinpoppen and I. McGregor	
High Resolution Laser Spectroscopy of Small Molecules	447
W. Demtröder, D. Eisel, H.J. Foth, M. Raab, H.J. Vedder, H. Weickenmeier	
Fast Ion Beam Laser Spectroscopy (Fiblas): A Case Study: N ₂ O ⁺	467
Michel L. Gaillard	
Resonant Fast-Beam/Laser Interactions: Saturated Absorption and Two-Photon Absorption	485
Ove Poulsen	

CONTENTS

xi

Isotopic Shifts	509
H.H. Stroke	
Hyperfine Structure and Isotope Shifts of Rydberg States in Alkaline Earth Atoms	543
E. Matthias, H. Rinneberg, R. Beigang, A. Timmermann, J. Neukammer, K. Lücke	
Concluding Remarks	565
Arthur L. Schawlow	
Index	571