1. Record Nr. UNINA9910782278403321

Titolo	NSTAR 2001 [[electronic resource]] : proceedings of the Workshop on the Physics of Excited Nucleons : Mainz, Germany, 7-10 March 2001 / / editors, D. Drechsel & L. Tiator
Pubbl/distr/stampa	Singapore ; ; River Edge, NJ, : World Scientific, c2001
ISBN	1-281-95646-5 9786611956462 981-281-087-0
Descrizione fisica	1 online resource (528 p.)
Altri autori (Persone)	TiatorL (Lothar) DrechselD. <1937->
Disciplina	539.7/216 539.7212 539.7216
Soggetti	Hadrons Particles (Nuclear physics) Baryons
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	CONTENTS ; Organization ; Foreword ; Nucleon Resonances in the Quark Model ; 1 Introduction ; 2 Effective Degrees of Freedom ; 3 Confining Interaction ; 4 Residual Interactions ; 5 Lattice Results ; 6 Hybrid Baryons ; 7 Effects of Decay Channel Couplings 8 Describing Reactions Using the Quark Model 9 Summary ; Acknowledgments ; References ; Quadrupole Strength in the N -> A Transition ; 1 Introduction ; 2 Theoretical Developments ; 3 The Bates y* N -> A Program ; 4 Future Prospects and Acknowledgments ; References Pion Electroproduction at ELSA 1 Introduction ; 2 Neutron Identification ; 3 First Results

; References ; TT0 Electroproduction in the A(1232) Region at MAMI ; 1 Introduction
; 2 Results of the p(e e'p)TT0 Experiment ;
3 Forward and Backward LT-Asymmetry in p(e e'p)TT0
4 Fifth Structure Function in p(e e'p)TT0
5 Summary ; Acknowledgements ; References
; Pion Electroproduction Using CLAS ; 1
Introduction ; References ; Recoil Polarization
Measurements in TT0 Electroproduction at the Peak of the A(1232)
; 1 Introduction
2 Measurement Philosophy: Exploiting Hall A's Tools
3 Specific Measurements for E91-011 ; 4
Accessible Responses and Expected Sensitivity to S1+.
; 5 Data Analysis - Sample Spectra ; 6
Conclusions/Outlook ; Acknowledgments
; References
Chiral Effective Field Theories with Explicit Spin 3/2 Degrees of Freedom - A Status Report

Sommario/riassunto

The study of N*s can provide us with critical insights into the nature of QCD in the confinement domain. The keys to progress in this domain are the identification of its important degrees of freedom and the effective forces between them. The nucleon is the simplest system in which the nonabelian character of QCD is manifest. There are Nc quarks in a baryon because there are Nc colors, and as a consequence Gell-Mann and Zweig were forced to introduce the quarks in order to describe the octet and decuplet baryons. This volume gives a status report on the recent experimental and theoretical results in the field of nucleon resonance physics. A wealth of new high precision data was presented from facilities around the world, such as BES, BNL, ELSA, GRAAL, JLab, MAMI, MIT/Bates, SPring8, and Yerevan. Particular emphasis was laid on polarization degrees of freedom and large acceptance detectors as precision tools for studying small but important transition amplitudes, and the helicity (spin) structure of the nucleon. There were new results describing the nucleon resonance structure on the basis of quantum chromodynamics, either directly in terms of quarks and gluons by means of lattice gauge theory, or in terms of hadrons in the framework of chiral field theories. A status report on duality showed the surprising connections between the physics of the low energy nucleon resonance region and the realm of quark structure functions in deep inelastic scattering. Finally, this volume contains a summary report of the BRAG workshop, devoted to the analysis of baryon resonances.