CONTENTS

In Memoriam v

Preface vii

Session A: Photon Structure 1

The Parton Structure of Real Photons 3
   A. Vogt

Measurement of QED Photon Structure Functions Using Azimuthal Correlations 16
   M. Doucet (OPAL Collaboration)

Muonic Structure Functions of the Photon 21
   C.A. Brew, S. Cartwright, M. Lehto (ALEPH Collaboration)

Study of the Photon Structure Function $F_2^\gamma$ at LEP1 and LEP2 26
   I. Tyapkin (DELPHI Collaboration)

Measurement of the Photon Structure Function $F_2^\gamma$ at Low $x$ in Inelastic Electron-Photon Scattering at LEP1 31
   J. Bechtluft (OPAL Collaboration)

Measurement of the Photon Structure Function 36
   A. Finch (ALEPH Collaboration)

The Photon Structure at Medium $x$ and $Q^2$ in Deep Inelastic e$\gamma$ Scattering at $\sqrt{s_{ee}} = 91$–172 GeV 41
   R. Nisius (OPAL Collaboration)

Detector KEDR Tagging System for Two-Photon Physics 47
Tuning MC Models to Fit DIS $\gamma \gamma$ Scattering Events  
*J.A. Lauber, L. Lönnblad, M.H. Seymour*

Model-Independent QED Corrections to Photon Structure-Function Measurements  
*E. Laenen, G.A. Schuler*

Quasi-Real Compton Scattering at DAΦNE for a Continuous Calibration of the KLOE Detector  
*A. Courau, G. Pancheri*

The Photon Spectrum in Quarkonia Decays  
*F. Hautmann*

Study of Multihadron Production in Two-Photon Collisions at LEP1 and LEP2  
*N. Zimin (DELPHI Collaboration)*

Cross Section for Hadron Production in Two Photon Events at LEP  
*W.L. van Rossum (L3 Collaboration)*

Scale Influence on the Energy Dependence of Photon-Proton Cross Sections and $F_2$ at Low $Q^2$  
*N.Z. Gogitidze (H1 Collaboration)*

Photon-Photon Total Inelastic Cross-Section  
*A. Corsetti, R.M. Godbole, G. Pancheri*

BFKL Scattering at LEP II and a Next $e^+e^-$ Collider  
*S.J. Brodsky, F. Hautmann, D.E. Soper*

Session B: Inclusive Processes  

Inclusive Hard Processes in Photon Induced Reactions  
*P. Aurenche*

Dijet Production in Photon-Photon Collisions at $\sqrt{s_{ee}} = 161$ and 172 GeV  
*R. Bürgin (OPAL Collaboration)*
Jets in Real and Virtual Photoproduction

H. Rick (H1 Collaboration) 127

Dijet Cross Sections and Rapidity Gaps Between Jets in Photoproduction at HERA

M. Hayes (ZEUS Collaboration) 134

Jet Shapes and Multijet Events in Hard Photoproduction at HERA

E.J. Strickland (ZEUS Collaboration) 139

Photoproduction of High Transverse Momentum Charged Particles and a Comparison of Strangeness Production in Photoproduction and Deep Inelastic Scattering

D. Milstead (H1 Collaboration) 144

Observation of Isolated High-ET Photons in Photoproduction at HERA

A.W. Vaiciulis (ZEUS Collaboration) 150

Virtual Photon Structure from Jet Production

J. Chyła*, J. Cvach 156

Probing the Structure of Virtual Photon in the Deep Inelastic Compton Process at HERA

M. Krawczyk*, A. Zembrzuski 162

A NLO Monte Carlo Generator for Photoproduction of Jets at HERA

L. Bourhis, M. Fontannaz, J.Ph. Guillet 168

Isolated Prompt Photon Plus Jet Photoproduction at HERA

L.E. Gordon 173

Inclusive D* and J/ψ Inelastic Photoproduction at HERA

L.K. Gladilin (ZEUS Collaboration) 179

Measurement of the Inclusive Charm Production in γγ Collisions at LEP

V.P. Andreev (L3 Collaboration) 184
Search for Single Leptoquark Production in Electron-Photon Scattering at $\sqrt{s} = 161$ and 172 GeV
S. Söldner-Rembold (OPAL Collaboration)

Session C: Exclusive Processes in $\gamma\gamma$ Interactions

Exclusive Photon-Photon Processes
S.J. Brodsky

Measurements of the Meson-Photon Transition Form Factors of Light Pseudoscalar Mesons at Large Momentum Transfer
V. Savinov (CLEO Collaboration)

Vector Meson Production in $\gamma\gamma$ Interactions at LEP with the L3 Detector
Á. Csilling (L3 Collaboration)

Resonances in Multi-Photon Final States in Positron Proton Scattering at HERA
S. Tapprogge (H1 Collaboration)

Study of the Glueball Candidate $f_1(2220)$ at CLEO
H.P. Paar (CLEO Collaboration)

Resonance Formation in Two-Photon Collisions with the L3 Detector at LEP
S. Braccini (L3 Collaboration)

Two-Photon Physics at the ARGUS
G. Medin (ARGUS Collaboration)

Inclusive $K_s^0$ Production in Two-Photon Processes at LEP 1 with DELPHI Detector
W. Da Silva*, J. Fayot, F. Kapusta (DELPHI Collaboration)

First Observation of Photon Splitting in a Strong Coulomb Field. Current Status of the Experiment

Photoproduction of Neutral Pion Pairs in the Coulomb Field of the Nucleus
A.A. Bel'kov, A.V. Lanyov, M. Dillig

New Determination of Scalar Meson Couplings to Two Photons from $\gamma\gamma \rightarrow \pi\pi$ Experimental Results
M. Boglione, M.R. Pennington

Predictions for the $\eta_c\gamma$ Transition Form Factor
T. Feldmann* and P. Kroll

A Generalization of the Brodsky-Lepage Formalism
L. Houra-Yaou, P. Kessler, J. Parisi, F. Murgia, J. Hansson

$\gamma^*\gamma^* \rightarrow \pi^0$ Reaction at Large Photon Virtualities
S. Ong

The Asymptotics of the Transition Form Factor $\gamma\gamma^* \rightarrow \pi^0$ and QCD Sum Rules
A.V. Radyushkin, R. Ruskov

Exact and Complete Monte-Carlo for $\gamma\gamma \rightarrow l^+l^-$
A. Courau, C. Carimalo, S. Ong

Session D: Diffractive and Elastic Scattering

Diffraction (at HERA) – an Introduction
M. Arneodo

Elastic and Dissociative Production of Vector Mesons at Small and Larger $Q^2$ at H1
J.H. Köhne (H1 Collaboration)

Recent Results from Investigations of Diffractive Vector Meson Production with the ZEUS Detector at HERA
J.A. Crittenden (ZEUS Collaboration)
Diffractive Electroproduction of $\rho^0$ Mesons at 27.5 GeV

M. Kolstein (HERMES Collaboration) 314

Results on Hard Diffraction from H1

T.R. Ebert (H1 Collaboration) 320

Inclusive Diffraction in Photoproduction and DIS at HERA

K. Piotrzkowski (ZEUS Collaboration) 332

Jets and Charm in Diffractive Events at HERA

J. Puga (ZEUS Collaboration) 338

Probing Hard Color-Singlet Exchange at DØ

B. May (DØ Collaboration) 343

The Gold Flashlight: Coherent Photons (and Pomerons) at RHIC

S. Klein and E. Scannapieco 348

Multiparticle Production in High-Mass Diffraction Dissociation and the Interplay of Photons and Pomerons

F.W. Bopp, R. Engel, J. Ranft, A. Rostovtsev 353

Diffractive Electroproduction at Intermediate and Low $Q^2$
and the Photon Wave Function

T. Gousset 358

Session E: Future Directions 365

Progress in Photon Colliders

V. Telnov 367

Physics at the Photon Linear Collider

G. Jikia 378

Some New Possibilities for Photon Colliders

I.F. Ginzburg 391

A Possibility to Control the Polarization of High-Energy Photons by Means of a Laser Beam

G.L. Kotkin, V.G. Serbo 401
Measuring the Two-Photon Decay Width of Intermediate-Mass Higgs at a Photon-Photon Collider

T. Ohgaki, T. Takahashi, I. Watanabe

Production of Higgs Bosons in $\gamma\gamma$ and $\gamma\rho$ Collisions at Present and Future Colliders

M. Krawczyk

Related Topics

Photons from the Universe, New Frontiers in Astronomy

H. Meyer

Summary Talks

An Experimenter's Highlights

D.J. Miller

PHOTON '97: Theory Summary

J.R. Forshaw

Papers Submitted without Presentation

An Approach to the Invariant Mass Reconstruction for the Single-Tagged $\gamma\gamma^*$ Events

V.N. Pozdnyakov

Energy Flows and Jet Production in Tagged $e\gamma$ Events at LEP

A.M. Rooke (OPAL Collaboration)

Simulations of the Interaction Region in a Photon-Photon Collider

P. Chen, T. Ohgaki, T. Takahashi, A. Spitkovsky, K. Yokoya

List of Participants