



Abstracts book

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Abstract ID : 440

Inclusive-jet cross sections in NC DIS at HERA and a comparison of the kt, anti-kt and SIScone jet algorithms

Content :

For the first time, differential inclusive-jet cross sections have been measured in neutral current deep inelastic ep scattering using the anti-kt and SIScone algorithms. The measurements were made for boson virtualities $Q^2 > 125 \text{ GeV}^2$ with the ZEUS detector at HERA using an integrated luminosity of 82 pb^{-1} and the jets were identified in the Breit frame. The performance and suitability of the jet algorithms for their use in hadron-like reactions were investigated by comparing the measurements to those performed with the kt algorithm. Next-to-leading-order QCD calculations give a good description of the measurements. Measurements of the ratios of cross sections using different jet algorithms are also presented; the measured ratios are well described by calculations including up to $O(\alpha_s^3)$ terms. Values of $\alpha_s(M_Z)$ were extracted from the data; the results are compatible with and have similar precision to the value extracted from the kt analysis.

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Inclusive-jet cross sections in photoproduction at HERA and a comparison of the kt, anti-kt and SIScone jet algorithms

Content :

Differential inclusive-jet cross sections have been measured in photoproduction using the anti-kt and SIScone algorithms. The measurements were made for boson virtualities $Q^2 < 1 \text{ GeV}^2$ with the ZEUS detector at HERA using an integrated luminosity of 82 pb^{-1} and the jets were identified in the laboratory frame. The performance and suitability of the jet algorithms for their use in hadron-like reactions were investigated by comparing the measurements to those performed with the kt algorithm. Next-to-leading-order QCD calculations were compared to the measurements. Measurements of the ratios of cross sections using different jet algorithms are also presented. Values of $\alpha_s(M_Z)$ were extracted from the data.

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Subjet distributions in deep inelastic scattering at HERA

Content :

Subjet distributions were measured in neutral current deep inelastic ep scattering with the ZEUS detector at HERA using an integrated luminosity of 81.7 pb⁻¹. Jets were identified using the kT cluster algorithm in the laboratory frame. Subjets were defined as jet-like substructures identified by a reapplication of the cluster algorithm at a smaller value of the resolution parameter y_{cut} . Measurements of subjet distributions for jets with exactly two subjets for $y_{\text{cut}}=0.05$ are presented as functions of observables sensitive to the pattern of parton radiation and to the colour coherence between the initial and final states. Perturbative QCD predictions give an adequate description of the data.

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Three-subjet distributions in neutral current deep inelastic scattering at HERA

Content :

Three-subjet distributions were measured in neutral current deep inelastic ep scattering with the ZEUS detector at HERA using an integrated luminosity of 299 pb^{-1} . Jets were identified using the kt cluster algorithm in the laboratory frame. Subjets were defined as jet-like substructures identified by a reapplication of the cluster algorithm at a smaller value of the resolution parameter y_{cut} . Measurements of subjet distributions for jets with exactly three subjets at $y_{\text{cut}} = 0.01$ are presented as functions of observables sensitive to the pattern of parton radiation and to the colour coherence between the initial and final states. Measurements are also presented as functions of angular correlations between the three subjets which provide a stringent test of perturbative QCD and show sensitivity to the contributions from different colour configurations. Perturbative QCD predictions give an adequate description of the data.

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Dijet cross sections in neutral current deep inelastic scattering at HERA

Content :

Single- and double-differential inclusive dijet cross sections in neutral current deep inelastic ep scattering have been measured with the ZEUS detector at HERA using a data sample corresponding to an integrated luminosity of 374 pb⁻¹. The measurement was performed at values of the photon virtuality, Q^2 , between 125 and 20000 GeV²; the jets were reconstructed with the kT cluster algorithm in the Breit reference frame and selected by requiring their transverse energies in the Breit frame to be larger than 8 GeV. In addition, the invariant mass of the dijet system was required to exceed 20 GeV. The cross sections are well described by perturbative QCD predictions at next-to-leading order in collinear factorisation.

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Inclusive-jet production in NC DIS with HERA II

Content :

Differential inclusive-jet cross sections have been measured in neutral current deep inelastic ep scattering for boson virtualities $Q^2 > 125 \text{ GeV}^2$ with the ZEUS detector at HERA using an integrated luminosity of 300 pb^{-1} . Jets were identified in the Breit frame using the kt cluster algorithm in the longitudinally inclusive mode. Single-differential cross sections are presented as functions of Q^2 , the jet pseudorapidity, η_{jet} , and the jet transverse energy, $E_{\text{T, jet}}$. In addition, measurements of double-differential inclusive-jet cross sections are presented as functions of $E_{\text{T, jet}}$ in different regions of Q^2 . Next-to-leading-order QCD calculations give a good description of the measurements. A value of $\alpha_s(M_Z)$ has been extracted from the measurements of the single-differential cross-section $d\sigma/dQ^2$ for $Q^2 > 500 \text{ GeV}^2$. The double-differential cross sections have the potential to constrain the gluon density in the proton when included as input to fits to extract the proton parton distribution functions.

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Abstract ID : 753

Inclusive-jet production in photoproduction with HERA II

Content :

Differential inclusive-jet cross sections have been measured in photoproduction for boson virtualities $Q^2 < 1 \text{ GeV}^2$ with the ZEUS detector at HERA using an integrated luminosity of 300 pb^{-1} . Jets were identified in the laboratory using the kt cluster algorithm in the longitudinally inclusive mode. Single-differential cross sections are presented as functions of the jet pseudorapidity, η_{jet} , and the jet transverse energy, $E_{T,\text{jet}}$. Next-to-leading-order QCD calculations give a good description of the measurements. A value of $\alpha_s(M_Z)$ has been extracted from the measurements.

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Dijet cross sections in photoproduction at HERA

Content :

Single- and double-differential inclusive dijet cross sections in photoproduction have been measured with the ZEUS detector using a data sample corresponding to an integrated luminosity of 300 pb⁻¹. The measurement was performed for photon virtuality $Q^2 < 1$ GeV²; the jets were reconstructed with the kT cluster algorithm in the laboratory frame. Next-to-leading-order QCD calculations give a good description of the measurements. The double-differential cross sections have the potential to constrain the gluon density in the proton when included as input to fits to extract the proton parton distribution functions.

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Abstract ID : 755

Isolated-photon production in ep collisions at HERA

Content :

Isolated-photon production has been measured in ep collisions at a centre-of-mass energy of 318 GeV with the ZEUS detector at HERA using an integrated luminosity of 320 pb⁻¹. Measurements of inclusive prompt-photon cross sections are presented as functions of the photon transverse energy and pseudorapidity in a wide range of exchanged-photon virtuality. In addition, differential gamma+jet cross sections are presented as functions of the jet transverse energy and pseudorapidity. Leading-logarithm parton-shower Monte Carlo predictions and perturbative QCD calculations are compared to the data.

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Measurement of prompt photons with associated jets in photoproduction at HERA

Content :

The photoproduction of prompt photons, together with an accompanying jet, has been studied in ep collisions at a centre-of-mass energy of 318 GeV with the ZEUS detector at HERA using an integrated luminosity of 249 pb⁻¹. The differential gamma+jet cross sections were measured as functions of the transverse energy, pseudorapidity and x_γ , the fraction of the incoming photon momentum taken by the photon-jet system. The results were combined with previous measurements to reduce the statistical uncertainties. Predictions based on leading-logarithm parton-shower Monte Carlo models and next-to-leading-order (NLO) QCD were compared to the data.

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Scaled momentum distributions of charged particles in dijet photoproduction at HERA

Content :

The scaled momentum distributions of charged particles in jets have been measured for dijet photoproduction with the ZEUS detector at HERA using an integrated luminosity of 359 pb⁻¹. The distributions are compared to predictions based on perturbative QCD carried out in the framework of the modified leading-logarithmic approximation (MLLA) and assuming local parton-hadron duality (LPHD). The universal MLLA scale, Λ_{eff} , and the LPHD parameter, κ^{ch} , are extracted.

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Abstract ID : 760

Scaled Momentum Spectra in deep inelastic Scattering at HERA

Content :

Charged particle production has been studied in neutral current deep inelastic ep scattering with the ZEUS detector at HERA using an integrated luminosity of 0.44 fb⁻¹. Distributions of scaled momenta in the Breit frame are presented for particles in the current fragmentation region. The evolution of these spectra with the photon virtuality, Q^2 , is described in the kinematic region $10 < Q^2 < 41000$ GeV². Next-to-leading-order and modified leading-log- approximation QCD calculations as well as predictions from Monte Carlo models are compared to the data. The results are also compared to e⁺e⁻ annihilation data. The dependences of the pseudorapidity distribution of the particles on Q^2 and on the energy in the p system, W , are presented and interpreted in the context of the hypothesis of limiting fragmentation.

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Scaled momentum spectra of identified particles in the Breit frame at HERA

Content :

Scaled momentum distributions of identified particles, K^0_S and Λ , have been measured in deep inelastic ep scattering with the ZEUS detector at HERA using an integrated luminosity of 290 pb^{-1} . The evolution of these distributions with the photon virtuality, Q^2 , are studied in the kinematic region $10 < Q^2 < 40000 \text{ GeV}^2$. The distributions have been measured in the current fragmentation region of the Breit frame. Next-to-leading-order QCD calculations including hadron-mass effects are compared to the data. The calculations reproduce the trends of the measured distributions as functions of Q^2 and the scaled momentum variable reasonably well.

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Deep inelastic scattering with leading protons or large rapidity gaps at HERA

Content :

The dissociation of virtual photons, $\gamma^* p \rightarrow X p$, in events with a large rapidity gap between X and the outgoing proton, as well as in events in which the leading proton was directly measured, has been studied with the ZEUS detector at HERA. The data cover photon virtualities $Q^2 > 2 \text{ GeV}^2$ and $\gamma^* p$ centre-of-mass energies $40 < W < 240 \text{ GeV}$, with $M_X > 2 \text{ GeV}$, where M_X is the mass of the hadronic final state, X . Leading protons were detected in the ZEUS leading proton spectrometer. The cross section is presented as a function of t , the squared four-momentum transfer at the proton vertex and Φ , the azimuthal angle between the positron scattering plane and the proton scattering plane. It is also shown as a function of Q^2 and x_{IP} , the fraction of the proton's momentum carried by the diffractive exchange, as well as β , the Bjorken variable defined with respect to the diffractive exchange.

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Diffractive PDF fits at HERA

Content :

ZEUS inclusive diffractive cross-section measurements have been used in a DGLAP next-to-leading-order QCD analysis to extract the diffractive parton distribution functions. Data on diffractive dijet production in deep inelastic scattering have also been included to constrain the gluon density. Predictions based on the extracted parton densities are compared to diffractive charm and dijet photoproduction data.

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A measurement of the Q^2 , W and t dependences of deeply virtual Compton scattering at HERA

Content :

Deeply virtual Compton scattering, $\gamma^* p \rightarrow \gamma p$, has been measured in e^+p collisions at HERA with the ZEUS detector using an integrated luminosity of 61.1 pb⁻¹. Cross sections are presented as a function of the photon virtuality, Q^2 , and photon-proton centre-of-mass energy, W , for a wide region of the phase space, $Q^2 > 1.5 \text{ GeV}^2$ and $40 < W < 170 \text{ GeV}$. A subsample of events in which the scattered proton is measured in the leading proton spectrometer, corresponding to an integrated luminosity of 31.3 pb⁻¹, is used for the first direct measurement of the differential cross section as a function of t , where t is the square of the four-momentum transfer at the proton vertex.

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Measurement of the longitudinal diffractive structure function at HERA

Content :

The reduced cross section in diffractive deep inelastic scattering events, $ep \rightarrow eXp$, was measured with the ZEUS detector at HERA, using three different centre-of-mass energies, 318, 252 and 225 GeV. The diffractive sample was selected by requiring a large rapidity gap between the hadronic system X and the outgoing proton. The longitudinal component of the diffractive structure function of the proton was extracted.

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Measurement of the total gamma-p cross section at a centre-of-mass energy of 320 GeV

Content :

The energy dependence of the total photon-proton cross-section is determined using data of three different proton beam energies collected with the ZEUS detector at HERA. These measurements correspond to centre-of-mass energies of 225 GeV, 250 GeV and 320 GeV.

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Leading proton production in deep inelastic scattering at HERA

Content :

The semi-inclusive reaction $e+p \rightarrow e+Xp$ was studied with the ZEUS detector at HERA using an integrated luminosity of 12.8 pb^{-1} . The final state proton, which was detected with the ZEUS leading proton spectrometer, carried a large fraction of the incoming proton energy, $x_L > 0.32$, and its transverse momentum squared satisfied $p_{T2} < 0.5 \text{ GeV}^2$; the exchanged photon virtuality, Q^2 , was greater than 3 GeV^2 and the range of the masses of the photon-proton system was $45 < W < 225 \text{ GeV}$. The leading-proton production cross section and rates are presented as a function of x_L , p_{T2} , Q^2 and the Bjorken scaling variable, x .

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Measurement of dijet photoproduction for events with a leading neutron at HERA

Content :

Differential cross sections for dijet photoproduction in association with a leading neutron, $e^+ + p \rightarrow e^+ + \text{jet} + \text{jet} + X (+n)$, have been measured with the ZEUS detector at HERA using an integrated luminosity of 40 pb⁻¹. The fraction of dijet events with a leading neutron was studied as a function of different jet and event variables. Single- and double-differential cross sections are presented as a function of the longitudinal fraction of the proton momentum carried by the leading neutron, x_L , and of its transverse momentum squared, p_T^2 . The dijet data are compared to inclusive DIS and photoproduction results; they are all consistent with a simple pion exchange model. The neutron yield as a function of x_L was found to depend only on the fraction of the proton beam energy going into the forward region, independent of the hard process. No firm conclusion can be drawn on the presence of rescattering effects.

Primary authors : Dr. HAAS, Tobias (DESY)

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

Last modified on : Friday 14 May 2010

Comments :

These results will be presented on behalf of the ZEUS collaboration

Abstract ID : 774

Exclusive photoproduction of Upsilon mesons at HERA

Content :

The exclusive photoproduction reaction $\gamma p \rightarrow \Upsilon p$ has been studied with the ZEUS detector in ep collisions at HERA using an integrated luminosity of 468 pb⁻¹. The measurement covers the kinematic range $60 < W < 220$ GeV and $Q^2 < 1$ GeV², where W is the photon-proton centre-of-mass energy and Q^2 is the photon virtuality. The γ -p cross section for Upsilon photoproduction is presented as a function of W and $|t|$, where t is negative transverse momentum square at the proton vertex. These results, which represent the analysis of the full ZEUS data sample for dimuon decay channel, are compared to predictions based on perturbative QCD.

Primary authors : Dr. HAAS, Tobias (DESY)

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Abstract ID : 775

Measurement of J/psi photoproduction at large momentum transfer at HERA

Content :

The proton-dissociative diffractive photoproduction of J/psi mesons has been studied in ep collisions with the ZEUS detector at HERA using an integrated luminosity of 112 pb. The cross section is presented as a function of the photon-proton centre-of-mass energy and of the squared four-momentum transfer at the proton vertex. The results are compared to perturbative QCD calculations.

Primary authors : Dr. HAAS, Tobias (DESY)

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Comments :

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Abstract ID : 776

Two pion diffractive electro-production

Content :

Diffractive electroproduction of pion pairs at HERA has been studied with the ZEUS detector. The analysis was carried out in the kinematic range of photon virtuality $2 < Q^2 < 80 \text{ GeV}^2$, gamma*p center-of-mass energy $40 < W < 180 \text{ GeV}$ and two-pion invariant mass $0.28 < M(\pi\pi) < 2.3 \text{ GeV}$. The $\pi^+\pi^-$ invariant-mass distribution was analyzed in terms of three isovector resonances: ρ , ρ' and ρ'' . Masses and widths as well as relative amplitudes were obtained using a fit to the pion electromagnetic form factor. The Q^2 dependence of the pion form factor was studied.

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

Last modified on : Friday 14 May 2010

Comments :

These results will be presented on behalf of the ZEUS Collaboration

Abstract ID : 778

Measurement of J/psi helicity distributions in inelastic photoproduction at HERA

Content :

The J/Psi decay angular distributions have been measured in inelastic photoproduction in ep collisions with the ZEUS detector at HERA, using an integrated luminosity of 468 pb⁻¹. The range in photon-proton centre-of-mass energy, W, was 50 < W < 180 GeV. The J/Psi mesons were identified through their decays into muon pairs. The polar and azimuthal angles of the muon+ were measured in the J/Psi rest frame and compared to theoretical predictions at leading and next-to-leading order in QCD.

Primary authors : Dr. HAAS, Tobias (DESY)

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Comments :

These results will be presented on behalf of the ZEUS Collaboration

Abstract ID : 779

Measurement of D⁺⁻ and D⁰ Production in Deep Inelastic Scattering Using a Lifetime Tag at HERA

Content :

The production of D⁺⁻ and D⁰ mesons has been measured with the ZEUS detector at HERA using an integrated luminosity of 133.6 pb⁻¹. The measurements cover the kinematic range $5 < Q^2 < 1000$ GeV², $0.02 < y < 0.7$, $1.5 < p_T(D) < 15$ GeV and $|\eta(D)| < 1.6$. Combinatorial background to the D meson signals is reduced by using the ZEUS microvertex detector to reconstruct displaced secondary vertices. Production cross sections are compared with the predictions of next-to-leading-order QCD which is found to describe the data well. Measurements are extrapolated to the full kinematic phase space in order to obtain the open-charm contribution, $F_2(c\bar{c})$, to the proton structure function, F_2 .

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

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Comments :

These results will be presented on behalf of the ZEUS Collaboration

Abstract ID : 780

Measurement of charm and beauty production in deep inelastic ep scattering from decays into muons at HERA

Content :

The production of charm and beauty quarks in ep interactions has been measured with the ZEUS detector at HERA for squared four-momentum exchange $Q^2 > 20 \text{ GeV}^2$, using an integrated luminosity of 126 pb^{-1} . Charm and beauty quarks were identified through their decays into muons. Differential cross sections were measured for muon transverse momenta $p_T^{\mu} > 1.5 \text{ GeV}$ and pseudorapidities $-1.6 < \eta^{\mu} < 2.3$, as a function of p_T^{μ} , η^{μ} , Q^2 and Bjorken x . The charm and beauty contributions to the proton structure function F_2 were also extracted. The results agree with previous measurements based on independent techniques and are well described by QCD predictions.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

Last modified on : Friday 14 May 2010

Comments :

These results will be presented on behalf of the ZEUS Collaboration

Abstract ID : 781

Measurement of D^+ and Λ_c^+ production in deep inelastic scattering at HERA

Content :

Charm production in deep inelastic scattering has been measured with the ZEUS detector at HERA using an integrated luminosity of 120 pb^{-1} . The hadronic decay channels $D^+ \rightarrow K^0 S \pi^+$, $\Lambda_c^+ \rightarrow p K^0 S$ and $\Lambda_c^+ \rightarrow \Lambda \pi^+$, and their charge conjugates, were reconstructed. The presence of a neutral strange hadron in the final state reduces the combinatorial background and extends the measured sensitivity into the low transverse momentum region. The kinematic range is $0 < p_T(D^+, \Lambda_c^+) < 10 \text{ GeV}$, $|\eta(D^+, \Lambda_c^+)| < 1.6$, $1.5 < Q^2 < 1000 \text{ GeV}^2$ and $0.02 < y < 0.7$. Inclusive and differential cross sections for the production of D^+ mesons are compared to next-to-leading-order QCD predictions. The fraction of c quarks hadronising into Λ_c^+ baryons is extracted.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

Last modified on : Friday 14 May 2010

Comments :

These results will be presented on behalf of the ZEUS Collaboration

Abstract ID : 782

Measurement of D⁺- production production and F_{2c} extraction in deep inelastic scattering at ZEUS

Content :

The production of charm quarks in deep inelastic ep scattering has been measured with the ZEUS detector at HERA using an integrated luminosity of 323 pb⁻¹. Charm events were identified through the D⁺ → K⁻ π⁺ π⁺ (+cc) decay channel. A lifetime tag based on decay length significance was applied to improve the signal to background ratio. The kinematic region was $1.5 < p_T(D^+) < 15 \text{ GeV}$, $|\eta(D^+)| < 1.6$, $5 < Q^2 < 1000 \text{ GeV}^2$ and $0.02 < y < 0.7$. Total and differential cross sections for D⁺ production were measured and compared to next-to-leading-order QCD calculations and published ZEUS results. The charm contribution to the proton structure function, F_{2c}, was extracted. The results agree with previous measurements and are well described by QCD predictions.

Primary authors : Dr. HAAS, Tobias (DESY)

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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These results will be presented on behalf of the ZEUS Collaboration

Abstract ID : 783

D* production in deep inelastic ep scattering at HERA

Content :

Inclusive production of D*(2010) mesons in deep inelastic ep scattering was studied in the $D^0 \pi_s$ decay channel with the ZEUS detector at HERA using an integrated luminosity of 360 pb⁻¹. Differential D* cross sections are presented as functions of the D* transverse momentum, $P_t(D^*)$, and pseudorapidity, $\eta(D^*)$, for $1.5 < P_t(D^*) < 15$ GeV and $|\eta(D^*)| < 1.5$ in the kinematic region of photon virtuality $5 < Q^2 < 1000$ GeV² and inelasticity $0.02 < y < 0.7$. In addition, differential cross sections for D* production as functions of Q^2 and Bjorken x are presented. Next-to-leading-order (NLO) QCD predictions give an adequate description of the data. The measured cross section was extrapolated using these predictions to the full kinematic region in y , $P_t(D^*)$ and $\eta(D^*)$ to determine the open charm contribution to the proton structure function, F_2^{cc} . Predictions from NLO QCD fits to inclusive data describe well the extracted F_2^{cc} from D* production.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

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Comments :

These results will be presented on behalf of the ZEUS Collaboration

Abstract ID : 784

Charm and beauty production in deep inelastic scattering from inclusive secondary vertexing at ZEUS

Content :

Charm and beauty production in deep inelastic scattering has been measured with the ZEUS detector using the full HERA II data set. The charm and beauty contents in events with a jet have been extracted using the decay length significance and invariant mass of secondary decay vertices. Differential cross sections as a function of Q^2 , Bjorken x , $p_T(\text{jet})$ and $\eta(\text{jet})$ were measured and compared to theoretical predictions. The open charm and beauty contributions to the proton structure function F_2 are extracted.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 785

Measurement of beauty production in DIS and F2b $\bar{b}b$ extraction at ZEUS

Content :

Beauty production in deep inelastic scattering with events in which a muon and a jet are observed in the final state has been measured with the ZEUS detector at HERA using an integrated luminosity of 114 pb⁻¹. The fraction of events with beauty quarks in the data was determined using the distribution of the transverse momentum of the muon relative to the jet. The cross section for beauty production was measured in the kinematic range of photon virtuality, $Q^2 > 2 \text{ GeV}^2$, and inelasticity, $0.05 < y < 0.7$, with the requirement of a muon and a jet. Total and differential cross sections are presented and compared to QCD predictions. The beauty contribution to the structure function F_2 was extracted and is compared to theoretical predictions.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 786

Measurement of beauty production from dimuon events at HERA

Content :

Beauty production in events containing two muon in the final state has been measured with the ZEUS detector at HERA using an integrated luminosity of 114 pb⁻¹. A low transverse-momentum threshold for muon identification, in combination with the large rapidity coverage of the ZEUS muon system, gives access to a very large fraction of the phase space for beauty production. The total cross section for beauty production in ep collisions at $\sqrt{s}=318$ GeV has been measured to be $\sigma_{\text{tot}}(\text{ep} \rightarrow \text{b} \bar{\text{b}} \text{X}) = 13.9 \pm 1.5(\text{stat.}) \pm 4.0 \pm 4.3(\text{syst.})$ nb. Differential cross sections and a measurement of b $\bar{\text{b}}$ correlations are also obtained, and compared to other beauty cross-section measurements, Monte Carlo models and next-to-leading-order QCD predictions.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 787

Measurement of charm and beauty photoproduction from inclusive secondary vertexing at HERA-II

Content :

Photoproduction of beauty and charm quarks in events with two jets has been measured with the ZEUS detector at HERA using an integrated luminosity of 130 pb⁻¹. The beauty and charm content was extracted using the decay-length significance of the b and c hadrons and the invariant mass of the decay vertices. Differential cross sections as functions of p_T(Jet) and eta(Jet) are compared with the Pythia leading order plus parton shower (LO+PS) Monte Carlo and QCD predictions calculated at next-to-leading order.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 788

Charm and beauty production with semi-leptonic decay into electrons in DIS and PHP at ZEUS

Content :

The production of heavy quarks in ep interactions has been studied with the ZEUS detector at HERA in the photoproduction and DIS regimes using an integrated luminosity of 360 pb⁻¹. The heavy flavour events were identified using electrons with a transverse momentum of at least $p_T(e) > 0.9$ GeV in the range $\eta(e) < 1.5$. The fractions of events containing the heavy quarks were extracted from a likelihood fit using variables sensitive to electron identification as well as to semileptonic decays. Total and differential cross sections for beauty, and in the case of photoproduction also for charm, were measured and compared with next-to-leading-order QCD calculations and Monte Carlo models. For squared four-momentum exchange of $10 < Q^2 < 1000$ GeV² the beauty contribution to the proton structure function, F_2^b , was extracted from the double differential cross section as a function of x and Q^2 .

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 791

Combination of F_2^{cc} from DIS measurements at HERA

Content :

The charm contribution F_2^{cc} to the proton structure function F_2 is determined. The results of D meson production cross section measurements are combined with the measurements using semi-leptonic decays into muons as well as inclusive track measurements. The correlations of the systematic uncertainties between different measurements are taken into account. The data cover the kinematic range of photon virtuality $2 < Q^2 < 1000 \text{ GeV}^2$ and Bjorken scaling variable $10^{-5} < x < 10^{-1}$.

Primary authors : Dr. HAAS, Tobias (DESY) ; Dr. KRÜGER, Katja (Universität Heidelberg)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

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Comments :

These results are presented on behalf of the H1 and ZEUS Collaborations

Abstract ID : 792

PDF fits including F2cc data

Content :

The combined H1 and ZEUS data on inclusive ep cross-sections together with the combined data on the semi-inclusive structure function $F_2(\text{charm})$ are used to extract the parton densities of the proton at NLO. The inclusion of the $F_2(\text{charm})$ data allows detailed tests of the heavy flavour treatment in various QCD calculations.

Primary authors : Dr. HAAS, Tobias (DESY) ; Dr. KRÜGER, Katja (Universität Heidelberg)

Co-authors : Dr. GEISER, Achim (DESY) ; Dr. TASSI, Enrico (Universita della Calabria) ; Dr. REISERT, Burkard (Max-Planck Institut für Physik München)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Last modified on : Friday 14 May 2010

Comments :

These results are presented on behalf of the H1 and ZEUS Collaborations

Abstract ID : 794

Measurement of the charm fragmentation function in D^* photoproduction at HERA

Content :

The charm fragmentation function has been measured in D^* photoproduction with the ZEUS detector at HERA using an integrated luminosity of 120 pb⁻¹. The fragmentation function is measured versus z , the ratio of $E+p_{\text{parallel}}$ for the D^* meson and that for the associated jet, where E is the energy and p_{parallel} the longitudinal momentum relative to the jet axis. Jets were reconstructed using the k_T clustering algorithm and required to have transverse energy greater than 9 GeV. The D^* meson associated with the jet was required to have a transverse momentum greater than 2 GeV. The measured function is compared to different fragmentation models incorporated in leading-logarithm Monte Carlo simulations and a next-to-leading-order calculation. The results are similar to those from e^+e^- experiments.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

Last modified on : Friday 14 May 2010

Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 795

Excited charm meson production at HERA

Content :

The production of the excited charm mesons $D1(2420)0$ and $D2^*(2460)0$ in inelastic ep scattering was studied with the ZEUS detector at HERA using an integrated luminosity of 372 pb⁻¹. Masses and widths were determined and a helicity analysis was performed. The results are compared with previous measurements and with theoretical expectations.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

Submitted on Friday 14 May 2010

Last modified on : Friday 14 May 2010

Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 797

Measurement of High- Q^2 Neutral Current Deep Inelastic e- Scattering Cross Sections with a Longitudinally Polarised Electron Beam at HERA

Content :

Measurements of the neutral current cross sections for deep inelastic scattering in e-p collisions at HERA with a longitudinally polarised electron beam are presented. The single-differential cross-sections $d\sigma/dQ^2$, $d\sigma/dx$ and $d\sigma/dy$ and the double-differential cross sections in Q^2 and x are measured in the kinematic region $y < 0.9$ and $Q^2 > 185 \text{ GeV}^2$ for both positively and negatively polarised electron beams and for each polarisation state separately. The measurements are based on an integrated luminosity of 169.9 pb^{-1} taken with the ZEUS detector in 2005 and 2006 at a centre-of-mass energy of 318 GeV. The structure functions xF_3 and $xF_3^{\gamma Z}$ are determined by combining the e-p results presented in this paper with previously measured e+p neutral current data. The asymmetry parameter A_- is used to demonstrate the parity violating effects of electroweak interactions at large spacelike photon virtuality. The measurements agree well with the predictions of the Standard Model.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 02 - The Standard Model and Electroweak Symmetry Breaking ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 799

Measurement of Charged Current Deep Inelastic Scattering Cross Sections with a Longitudinally Polarised Electron Beam at HERA

Content :

Measurements of the cross sections for charged current deep inelastic scattering in e-p collisions with longitudinally polarised electron beams are presented. The measurements are based on a data sample with an integrated luminosity of 175pb⁻¹ collected with the ZEUS detector at HERA at a centre-of-mass energy of 318 GeV. The total cross section is given for positively and negatively polarised electron beams. The differential cross-sections $d\sigma/dQ^2$, $d\sigma/dx$ and $d\sigma/dy$ are presented for $Q^2 > 200 \text{ GeV}^2$. The double-differential cross-section $d^2\sigma/dxdQ^2$ is presented in the kinematic range $280 < Q^2 < 30000 \text{ GeV}^2$ and $0.015 < x < 0.65$. The measured cross sections are compared with the predictions of the Standard Model.

Primary authors : Dr. HAAS, Tobias (DESY)

Co-authors : Dr. REISERT, Burkard (Max-Planck Institut für Physik München) ; Dr. GEISER, Achim (DESY) ; Prof. TASSI, Enrico (Universita della Calabria)

Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 02 - The Standard Model and Electroweak Symmetry Breaking ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 800

Measurement of high- Q^2 charged current deep inelastic scattering cross sections with a longitudinally polarised positron beam at HERA

Content :

Measurements of the cross sections for charged current deep inelastic scattering in $e+p$ collisions with a longitudinally polarised positron beam are presented. The measurements are based on a data sample with an integrated luminosity of 132 pb^{-1} collected with the ZEUS detector at HERA in 2006 and 2007 at a centre-of-mass energy of 318 GeV. The total cross section is presented at positive and negative values of the longitudinal polarisation of the positron beams. The single-differential cross sections $d\sigma/dQ^2$, $d\sigma/dx$ and $d\sigma/dy$ are presented for $Q^2 > 200 \text{ GeV}^2$. The reduced double-differential cross section is presented in the kinematic range $280 < Q^2 < 30\,000 \text{ GeV}^2$ and $0.0078 < x < 0.42$. The cross section measurements agree well with the predictions of the Standard Model. In addition, a linear fit is applied to the total cross section as a function of polarisation. The fit is extrapolated to determine the upper limit on the cross section for a fully left-handed positron beam. The lower limit on the mass of a hypothetical W boson which couples to right-handed particles is then extracted.

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 02 - The Standard Model and Electroweak Symmetry Breaking ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy ; 10 - Beyond the Standard Model (theory and experimental searches)

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 801

Measurement of electron-proton neutral current cross sections at high Bjorken-x with the ZEUS detector at HERA

Content :

A new method is employed to measure the neutral current cross section up to Bjorken-x values of one with the ZEUS detector at HERA using an integrated luminosity of 187 pb⁻¹ of e-p collisions at $\sqrt{s} = 318$ GeV. Cross sections have been extracted for $Q^2 \geq 575$ GeV². A much improved precision with respect to the previous ZEUS publication, which only used 16.7 pb⁻¹ of e-p collisions, is achieved, owing to the larger data sample and improved kinematic reconstruction methods. The measurement is well described by predictions based on the CTEQ6D PDFs.

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Abstract ID : 804

Search for contact interactions in ep collisions with ZEUS experiment at HERA

Content :

A search for physics beyond the Standard Model is performed with high- Q^2 neutral current deep inelastic scattering events recorded with the ZEUS detector at HERA. Complete data on scattering of polarized electrons and positrons from HERA II running are combined with electron and positron data from HERA I, resulting in a total luminosity of 0.44 fb^{-1} . No significant deviations from the Standard Model predictions are observed. Limits are derived on the effective mass scale in $eeqq$ contact interactions, on the mass to the Yukawa coupling ratio for heavy-leptoquark models, on the effective Planck-mass scale in models with large extra dimensions and on the quark charge radius.

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 02 - The Standard Model and Electroweak Symmetry Breaking ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy ; 10 - Beyond the Standard Model (theory and experimental searches)

Contribution type : Parallel Session Talk

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These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 805

Isolated Leptons and Missing Transverse Momentum and Measurement of W Production at HERA

Content :

A search for events containing an isolated electron or muon and missing transverse momentum produced in $e+p$ collisions is performed with the H1 and ZEUS detectors at HERA. The data were taken in the period 1994-2007 and correspond to an integrated luminosity of 0.98 fb^{-1} . The observed event yields are in good overall agreement with the Standard Model prediction, which is dominated by single W production. In the $e+p$ data, at large hadronic transverse momentum $PT(X) > 25 \text{ GeV}$, a total of 23 events are observed compared to a prediction of 14.0 ± 1.9 . The total single W boson production cross section is measured as $1.06 \pm 0.16 \text{ (stat.)} \pm 0.07 \text{ (sys.) pb}$, in agreement with an SM expectation of $1.26 \pm 0.19 \text{ pb}$.

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 02 - The Standard Model and Electroweak Symmetry Breaking ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

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These results are presented on behalf of the H1 and ZEUS Collaborations

Abstract ID : 806

Multi-Leptons with High Transverse Momentum at HERA

Content :

Events with at least two high transverse momentum leptons (electrons or muons) are studied using the H1 and ZEUS detectors at HERA with an integrated luminosity of 0.94 fb^{-1} . The observed numbers of events are in general agreement with the Standard Model predictions. Seven di- and tri-lepton events are observed in $e+p$ collision data with a scalar sum of the lepton transverse momenta above 100 GeV, while 1.94 ± 0.17 events are expected. Such events are not observed in $e-p$ collisions for which 1.19 ± 0.12 are predicted. Total visible and differential di-electron and di-muon photoproduction cross sections are extracted in a restricted phase space dominated by photon-photon collisions.

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Track classification : 02 - The Standard Model and Electroweak Symmetry Breaking ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

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These results are presented on behalf of the H1 and ZEUS Collaborations

Abstract ID : 807

Multi-lepton production at high transverse momentum at HERA

Content :

A search for events containing two or more high-transverse momentum isolated leptons has been performed in ep collisions with the ZEUS detector at HERA using the full collected data sample, corresponding to an integrated luminosity of 480 pb⁻¹. The number of observed events has been compared with the prediction from the Standard Model, searching for possible deviations, especially for multi-lepton events with invariant mass larger than 100 GeV. Good agreement with the Standard Model has been observed. Total and differential cross sections for di-lepton production have been measured in a restricted phase space dominated by photon-photon collisions.

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Track classification : 02 - The Standard Model and Electroweak Symmetry Breaking ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

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Abstract ID : 808

Study of tau-pair production with the ZEUS detector at HERA

Content :

A search for events containing two high-transverse-momentum tau leptons has been performed with the ZEUS detector at HERA, using the data sample collected between 2004 and 2007, corresponding to an integrated luminosity of 0.36 fb⁻¹. At least one of the tau candidates is required to decay hadronically, while the second tau is required to decay either into an electron or into hadrons. The number of observed tau pairs is compared to the predictions from the Standard Model, where the largest contribution is expected from Bethe-Heitler interactions.

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 02 - The Standard Model and Electroweak Symmetry Breaking ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

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These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 809

Search for single-top production in ep collisions at HERA

Content :

A search for single-top production, $ep \rightarrow e\bar{t}X$, has been performed with the ZEUS detector at HERA using an integrated luminosity of 277 pb⁻¹. Events from muonic and electronic decay channels of the W boson resulting from the decay of the top quark have been investigated. The search has been made for events with isolated high-energy leptons and high missing transverse momentum. No evidence for top production has been found. The results have been used to constrain single-top production via flavour changing neutral current (FCNC) transitions.

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Track classification : 02 - The Standard Model and Electroweak Symmetry Breaking ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 811

Measurement of the longitudinal proton structure function at HERA

Content :

The reduced cross sections for ep deep inelastic scattering have been measured with the ZEUS detector at HERA at three different centre-of-mass energies, 318, 251 and 225 GeV. From the cross sections, measured double differentially in Bjorken x and the virtuality, Q^2 , the proton structure functions F_L and F_2 have been extracted in the region $0.0005 < x < 0.007$ and $20 < Q^2 < 130 \text{ GeV}^2$.

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Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

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These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 813

Extraction of the proton parton density functions using a NLO-QCD fit of the ZEUS inclusive DIS and jet cross sections

Content :

A NLO QCD analysis of ZEUS inclusive cross sections and jet-production data, including data with polarised lepton beams, is presented. The analysis includes the most recent results on neutral current and charged current inclusive cross sections in e+p and e-p collisions extracted from the HERAII run, together with the NC cross sections measured at lower proton beam energy. The analysis is used to assess the impact of the most recent data on the parton distribution functions and their uncertainties.

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 815

Measurement of the neutral current deep inelastic scattering cross-sections at high y and low Q^2

Content :

The measurements of the reduced cross sections for e+p deep inelastic scattering at high inelasticities y for three different centre-of-mass energies, 318, 251 and 225 GeV have been extended to lower momentum transferred squared, Q^2 . The analysis of satellite vertex events allows to extend the cross section measurement at high y down to $Q^2 = 5 \text{ GeV}^2$, substantially lower than the previously published cross section measurements from which the longitudinal structure function, F_L , was extracted.

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Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

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Comments :

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Abstract ID : 817

PDF fits including HERA-II high Q^2 data

Content :

The QCD fit analysis of the combined HERA-I inclusive deep inelastic cross sections has been extended to include combined HERA II measurements at high Q^2 . The effect of including these data on the determination of parton distribution functions is analysed, using fits similar to those performed for HERAPDF1.0. The precision of the PDFs at high- x is considerably improved- particularly in the valence sector.

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Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

Submitted by : Mr. HAAS, Tobias

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Comments :

These results are presented on behalf of the H1 and ZEUS Collaborations

Abstract ID : 863

Deeply Virtual Compton Scattering at HERA

Content :

Deeply virtual Compton scattering (DVCS) production in ep collisions at HERA was studied with the ZEUS detector using an integrated luminosity of 0.5 fb⁻¹. New measurements of cross sections as functions of the photon virtuality, Q^2 , and the photon-proton centre-of-mass energy, W are presented. In addition, differential cross sections as functions of the square of the four-momentum transfer at the proton vertex, t , are also shown.

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Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 864

Measurement of beauty photoproduction using decays into muons in dijet events at HERA

Content :

Beauty photoproduction in dijet events has been measured at HERA with the ZEUS detector using an integrated luminosity of 126 pb⁻¹. Beauty was identified in events with a muon in the final state by using the transverse momentum of the muon relative to the closest jet. Lifetime information from the silicon vertex detector was also used; the impact parameter of the muon with respect to the primary vertex was exploited to discriminate between signal and background. Cross sections for beauty production as a function of the muon and the jet variables as well as dijet correlations are compared to QCD predictions and to previous measurements. The data are well described by predictions from next-to-leading-order QCD.

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Track classification : 03 - Perturbative QCD, Jets and Diffractive Physics ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

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Comments :

These results are presented on behalf of the ZEUS Collaboration

Abstract ID : 892

Measurement of Z^0 production in ep collisions at HERA

Content :

The production of Z^0 bosons in ep collisions at HERA has been searched for with the ZEUS detector using a data sample corresponding to a luminosity of 0.4fb^{-1} . In the SM, this process has a very small cross section of approximately 0.3 pb . The search was done for the decays of the Z^0 to two energetic jets of hadrons. To avoid a large contribution from QCD backgrounds, the event selection was optimized for final states in which no hadronic activity is observed in the forward region of the calorimeter, thus preferentially selecting elastic and quasi-elastic interactions on the proton side. The resulting di-jet invariant mass distribution is presented for the selected event topologies.

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Presenter : Dr. HAAS, Tobias (DESY)

Track classification : 02 - The Standard Model and Electroweak Symmetry Breaking ; 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

Contribution type : Parallel Session Talk

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