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Measurement of high-Q2 e+p neutral current cross sections at HERA and determination of the structure function xF3

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The cross sections for neutral current deep inelastic scattering in e+p collisions with a longitudinally polarised positron beam have been measured using the ZEUS detector at HERA. The single-differential cross-sections dsigma/dQ2, dsigma/dx and dsigma/dy and the double-differential cross sections in Q2 and x are measured in the kinematic region Q2 > 185 GeV2 for both positively and negatively polarised electron beams and for each polarisation state separately. The measurements are based on an integrated luminosity of 136 pb-1 taken in 2006 and 2007 at a centre-of-mass energy of 318 GeV. The structure functions xF_3 and xF_3^{\gammaZ} are determined by combining the e+p results presented in this analysis with previously measured e-p neutral current data. The measured cross sections are compared to the predictions.

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