Towards a Precise Measurement of the Proton Structure Function F_2 at Very Low Q^2 with the H1 Detector

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Studies are presented towards a precision measurement of the deep inelastic scattering cross section at very low Q^2, using data of a shifted vertex run from mid 2000 taken with the H1 detector at HERA. The talk presents first results, based on data selection, detector efficiencies, alignment and calibration, and on kinematic reconstruction.