

# 30th International Symposium on Lepton Photon Interactions at High Energies



Contribution ID: 134

Type: **Parallel session talk**

## Measurement of 1-jettiness in the Breit Frame at high $Q^2$

*Wednesday, 12 January 2022 09:40 (20 minutes)*

A first measurement of the 1-jettiness event shape observable in neutral-current deep-inelastic electron-proton scattering is presented. The 1-jettiness observable  $\tau_{1b}$  is defined such that it is equivalent to the thrust observable defined in the Breit frame. The data were taken in the years 2003 to 2007 with the H1 detector at the HERA ep collider at a center-of-mass energy of 319 GeV and correspond to an integrated luminosity of  $351.6 \text{ pb}^{-1}$ . The triple-differential cross sections are presented as a function of the 1-jettiness  $\tau_{1b}$ , the event virtuality  $Q^2$  and the inelasticity  $y$  in the kinematic region  $Q^2 > 150 \text{ GeV}^2$ . The data have sensitivity to the parton distribution functions of the proton, the strong coupling constant and to resummation and hadronisation effects. The data are compared to selected predictions.

H1prelim-21-032

**Primary authors:** H1, Collaboration (DESY); SCHMITT, Stefan (Deutsches Elektronen-Synchrotron (DE))

**Presenter:** KLEST, Henry (Stony Brook University)

**Session Classification:** Precision SM Measurements

**Track Classification:** Standard Model