## The azimuthal correlation between the leading jet and the scattered lepton in deep inelastic scattering at HERA

Friday 19 July 2024 11:45 (15 minutes)

The azimuthal correlation angle,  $\Delta\phi$ , between the scattered lepton and the leading jet in deep inelastic ep scattering at HERA has been studied using HERA II data collected with the ZEUS detector. Differential cross sections,  $d\sigma/d\Delta\phi$ , are presented for the first time as a function of the azimuthal correlation angle in various ranges of the jet transverse momentum  $p_{T,jet}$ , photon virtuality  $Q^2$  and jet multiplicity. Perturbative calculations at  $\mathcal{O}(\alpha_s^2)$  accuracy successfully describe the data within the defined fiducial region, while a lower level of agreement is observed near  $\Delta\phi \rightarrow \pi$  for events with high jet multiplicity due to limitations of the perturbative approach in describing soft QCD phenomena. Monte Carlo predictions that supplement leading-order matrix elements with parton showering describe the data as well as the  $\mathcal{O}(\alpha_s^2)$  calculations do.

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Session Classification: Strong interactions and Hadron Physics

Track Classification: 06. Strong Interactions and Hadron Physics