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Parallel sessions:
Plenary sessions:

Study of Three-Jet Production in Deep-Inelastic Positron Proton Collisions at HERA

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The production of three-jet events has been studied in deep-inelastic positron proton collisions using data collected with the H1 detector in 1995-1997. In the kinematic range of four-momentum transfers $5 < Q^2 < 15000$ GeV^2 a set of variables describing the three-jet system is investigated. The cross sections as a function of the invariant three-jet mass $M_{3\mathrm{J}}$, the average transverse jet energy in the Breit frame $\overline{E}_{T,\mathrm{Breit}}$ as well as x_{Bj} and Q^2 are measured. Furthermore the shape of the Dalitz variables $X_3 = E_3/M_{3\mathrm{J}}$, $X_4 = E_4/M_{3\mathrm{J}}$, where E_3 (E_4) is the energy of the (second) highest jet in the three jet center of mass frame, and two angular distributions are studied. Events with 3-jet masses up to $M_{3\mathrm{J}} = 130$ GeV and $\overline{E}_{T,\mathrm{Breit}} = 30$ GeV have been found in the data sample. The results are compared to the predictions of parton cascade models and to perturbative calculations in $\mathcal{O}(\alpha_s^2)$.