Abstract 250
Parallel sessions: 2,3,4
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Multiplicity Structure of Hadronic Final States in Diffractive Deep–Inelastic Scattering at HERA

H1 Collaboration

The charged particle multiplicity of the hadronic system X in deep-inelastic processes at HERA of the form $ep \rightarrow eXY$, where Y is dominantly a proton, is studied as a function of the diffractive mass M_X. Results for multiplicity moments, correlations between forward and backward hemispheres in the rest frame of X and the multiplicity distribution itself, in various rapidity domains, are compared to data from e^+e^- annihilation and hadron–hadron collisions and to Monte Carlo models. Evidence is presented to show that the long–range correlation between final state hadrons is larger in diffractive DIS than in e^+e^- annihilation. This indicates that the colour connections between partons in the system X are more complex than those of a single colour string, and therefore favours models with a gluon–dominated Pomeron.