



Contribution ID: 41

Type: **not specified**

Study of ordered hadron chains with the ATLAS detector

The analysis of the momentum difference between charged hadrons in high-energy proton-proton collisions is performed in order to study coherent particle production. The observed correlation pattern agrees with a model of a helical QCD string fragmenting into a chain of ground-state hadrons. A threshold momentum difference in the production of adjacent pairs of charged hadrons is observed, in agreement with model predictions. The presence of low-mass hadron chains also explains the emergence of charge-combination-dependent two-particle correlations commonly attributed to Bose-Einstein interference. The data sample consists of 190 inverse microbarns of minimum bias events collected with proton-proton collisions at a center-of-mass energy of 7 TeV in the early low-luminosity data taking with the ATLAS detector at the LHC.

Primary author: ATLAS, collaboration

Track Classification: Low-x, PDFs and hadronic final state