

Eccentricity and elliptic flow in proton-proton collisions from parton evolution

Monday, May 23, 2011 3:40 PM (20 minutes)

It has been argued that high-multiplicity proton-proton collisions at the LHC may exhibit collective phenomena usually studied in the context of heavy-ion collisions, such as elliptic flow. We study this issue using DIPSY, a brand-new Monte Carlo event generator which features almost-NLL BFKL dynamics and describes the transverse shape of the proton including all fluctuations. We predict the eccentricity of the collision as a function of the multiplicity and estimate the magnitude of the elliptic flow. We then compare the result with correlation from “nonflow” effects and suggest how to suppress the latter by applying cuts in the final state.

Primary author: Dr HATTA, Yoshitaka (University of Tsukuba)

Co-authors: Dr FLENSBURG, Christoffer (Lund); Dr AVSAR, Emil (Penn State); Prof. OLLITRAULT, Jean-Yves (Saclay); Dr UEDA, Takahiro (Karlsruhe)

Presenter: Dr HATTA, Yoshitaka (University of Tsukuba)

Session Classification: Correlations and fluctuations

Track Classification: Correlations and fluctuations