## On the chaoticity dependence on energy deduced from Bose-Einstein correlations of pion-pairs produced in pp collisions


#### Abstract

The energy dependence of the strength parameter also called the chaoticity, derived from Bose-Einstein correlations (BEC) of pion-pairs produced in proton-proton collisions is investigated. Considered are the one and three dimensions (1D, 3D) of the BEC analyzed in terms of a Gaussian and / or exponential distributions. A marked difference is observed between the dependence of the chaoticity on energy in the 1 D and the 3D analyses. The experimental data are examined in terms of the relation between the pion sources and the BEC dimension R which in turn are deduced from the charged outgoing particle multiplicity. This approach follows the 1D chaoticity general energy behavior as obtained from the BEC analyzes of the proton-proton collision data. Prediction for the chaoticity dependence on energy is obtained over a multi- TeV energy range based on a model of independent pion sources. The decrease of the chaoticity value with energy is expected within the framework of this approach.


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