

The transverse structure of the proton from ISR to LHC energies

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The initial energy deposited in heavy ion collisions depends on the initial size and shape of the interaction area. Therefore, a precise picture of the proton in impact parameter space is needed in order to correctly interpret the recent and forthcoming RHIC and LHC results in pp,pA and AA collisions. In this talk, I shall present a comparative study of the impact parameter profile of the proton-proton scattering amplitude constrained by the available data on the pp elastic cross section from ISR to LHC energies. Our analysis is based on a two-scale picture in which the clouds of small gluons surrounding the valence quarks are much more smaller than the hadronic radius.

Primary author: SOTO ONTOSO, Alba (UGR)

Co-author: ALBACETE, Javier L (Universidad de Granada)

Presenter: SOTO ONTOSO, Alba (UGR)

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