Contribution ID: **25** Type: **not specified**

Exploring the effect of correlated constituents in p+p interactions at LHC energies

Tuesday, 19 September 2017 17:00 (20 minutes)

In this talk we present the consequences of considering correlated constituents inside the proton on the initial state properties of p+p interactions at LHC energies [1,2]. The proton is modeled as a system of gluonic hot spots whose transverse positions are subjected to short-range repulsive correlations. We rely on a Monte Carlo Glauber approach with event-by-event fluctuations in the transverse positions of the hot spots and their entropy deposition. In fact the inclusion of non-trivial spatial correlations leads to substantial differences in the results for initial state properties, the spatial eccentricities. Further we show the centrality dependence of the (anti)-correlation of ε_2 and ε_3 in terms of symmetric cumulants. This study is particularly relevant and timely as the recent measurement of the symmetric cumulants by the CMS Collaboration has shown, once again, a similar pattern across different interaction systems from high-multiplicity p+p to p+Pb and Pb+Pb adding evidence on the possibility of having collective effects in small systems.

[1] Physics Letters B 770, 149 (2017)

[2] arXiv: 1612.06274 [hep-ph] (to appear in PRC).

Primary author: SOTO ONTOSO, Alba (UGR/FIAS)

Co-authors: ALBACETE, Javier L (Universidad de Granada); PETERSEN, Hannah

Presenter: SOTO ONTOSO, Alba (UGR/FIAS)

Session Classification: Small systems / Azimuthal anisotropies