QUARK MATTER 2015
Sep. 27 – Oct. 3, 2015 Kobe, Japan

Contribution ID: **396** Type: **Contributed talk**

# Charged-Particle Multiplicity Distributions over Wide Pseudorapidity Range in Proton-Proton Collisions with ALICE

*Monday 28 September 2015 14:50 (20 minutes)*

The distribution of charged particles produced in high energy pp collisions, $P(N_{ch})$, as a function of $N_{ch}$, is sensitive to the number of collisions between quarks and gluons contained in the colliding systems and to the mechanisms underlying particle production. In particular, it is a good probe for the saturation density of gluons in the colliding hadrons.

For the first time, the multiplicity distributions for pp collisions are measured over a wide kinematic range at the LHC (pseudorapidity coverage of $-3.4 < \eta < +5.1$). The $P(N_{ch})$ are obtained at LHC Run 1 energies: from $\sqrt{s}$ =0.9 to 8 TeV, and at the highest available energy $\sqrt{s}$ =13 TeV from Run 2. The distributions are measured using the Forward Multiplicity Detector (FMD) and the Silicon Pixel Detector (SPD) of ALICE at LHC.

The results are compared, where possible, with the results of other LHC experiments and with Monte Carlo simulations. Moreover, data are compared using the Koba–Nielsen–Olesen (KNO) model, where it appears that the scaling predicted by this model is broken at energies from 0.9 TeV.

## On behalf of collaboration:

ALICE

**Author:** ZACCOLO, Valentina (University of Copenhagen (DK))

**Presenter:** ZACCOLO, Valentina (University of Copenhagen (DK))

**Session Classification:** Initial State Physics and Approach to Equilibrium I

**Track Classification:** Initial State Physics and Approach to Equilibrium