



Contribution ID: 14

Type: not specified

## COMPASS results on pion and kaon multiplicities in DIS and ratios of $K^-/K^+$ and $p\bar{b}ar/p$ multiplicities.

*Monday 3 February 2020 16:10 (25 minutes)*

We present preliminary COMPASS results on pion and kaon multiplicities produced in semi-inclusive deep inelastic scattering of 160 GeV muons off a pure proton (LH2) target. The results constitute a data set of more than 600 points for pions and 600 for kaons, covering a large  $x$ ,  $Q^2$  and  $z$  domain in a fine binning with  $W > 5$  GeV. The results from the sum of the  $z$ -integrated multiplicities  $M(\pi^+) + M(\pi^-)$  and  $M(K^+) + M(K^-)$  are presented versus  $x$  and compared to earlier COMPASS results on a deuteron target and to other experiments.

In addition, we show the  $K^-/K^+$  as well as  $p\bar{b}ar/p$  multiplicity ratios measured for hadrons carrying a large fraction  $z$  of the virtual-photon energy,  $0.5 < z < 1$ , using an isoscalar  ${}^6\text{LiD}$  target. The ratios can be obtained with lower systematic errors. For values of  $z$  larger than 0.8, the results contradict expectations obtained using the formalism of (next-to-) leading order perturbative quantum chromodynamics. In particular the data show a strong dependence upon the missing mass  $M_x$ , not expected from the calculations. The results suggest that additional corrections to the formalism may be required to take into account the phase space available for hadronization.

**Primary author:** KUNNE, Fabienne (Université Paris-Saclay (FR))

**Presenter:** KUNNE, Fabienne (Université Paris-Saclay (FR))

**Session Classification:** Afternoon