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Erratum to: Hadron transverse momentum distributions in muon deep inelastic scattering at 160 GeV/c

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This paper is an erratum to a previous paper [1] (EPJC 73 (2013) 2531) published by C. Adolph et al. (The COMPASS Collaboration) using a data sample taken in 2004.

In the course of the ongoing analysis of the more recent 2006 data sample, and following some additional hints [2, 3] we identified a problem in the analysis of the 2004 data presented in EPJC 73 (2013) 2531. The acceptance correction for the 2004 data sample did not properly account for the use of semi-inclusive triggers on top of the inclusive triggers.

While not affecting significantly the shape of the distributions as a function of p_T^2 , the problem in the acceptance corrections causes a significant (up to 25 %) z and y dependent bias in the p_T^2 -integrated multiplicities obtained from Ref. [1].

The main emphasis of the article was the study of the z -dependence of the exponential-slope parameter $\langle p_T^2 \rangle$ as a potential tool to extract the average intrinsic transverse momentum squared of partons $\langle k_{\perp}^2 \rangle$. The absolute normalization does not enter the analysis.

In addition, we would like to point out that the radiative corrections were not applied to the multiplicity results, which may not be fully evident from the text.

We have also checked using the RADGEN [4] simulation that the radiative corrections do not significantly affect the shape of the distributions as a function of p_T^2 , either in the range of the fits $0.01 (\text{GeV}/c)^2 < p_T^2 < 0.72 (\text{GeV}/c)^2$, or in the range $p_T^2 < 1.3 (\text{GeV}/c)^2$ of the multiplicity results. The radiative corrections to the multiplies integrated over p_T^2

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depend on both Bjorken x and inelasticity y . The corrections are below 15 % over the full range of the measurement.

The results and conclusions drawn in Ref. [1] are not affected by the error, and a full reanalysis of the data is not foreseen. The only change to the published article is in the last sentence of the second paragraph of the section labeled Results. The last sentence should read as follows: “The point-to-point systematic uncertainty in the measured multiplicities as a function of p_T^2 is estimated to be 5 % of the measured value. The systematic uncertainty in the overall normalization of the p_T^2 -integrated multiplicities depends on z and y and can be as large as 40 %”.

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