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The impact of the LHC nuclear program on nPDFs

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One of the goals of the proton-lead run at the LHC is to produce a benchmark for heavy-ion collisions. Preliminary analyzes hint that nPDFs fail to give a proper description for certain observables. Here we present a full study of the compatibility between current sets of initial state nuclear distributions and data from the LHC p-Pb run. By means of the Hessian reweighting technique we give a quantitative estimate of the modification of nPDFs due to novel data, and also determine wether or not performing a new extraction of nPDFs is mandatory at this point. The thorough understanding of partonic behaviour in a nuclear medium shall be of great relevance for future electron-ion and proton-ion colliders.

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