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Evidence of Saturation via p(d)A Collisions: Theory Confronts Data

ADRIAN DUMITRU, Baruch College, City University of New York

It is nowadays established that the density of soft gluons in a hadron grows rapidly with energy. It is thought that non-linearities of the gluon fields generate dynamically a typical transverse momentum scale Qs, the so-called saturation scale. Its dependence on energy and nuclear mass number follows from nonlinear evolution equations. One of the main goals of the p+p, p+A, and A+A collision programs at the BNL-RHIC and CERN-LHC colliders is to test general theoretical expectations and the accuracy of currently available computational frameworks. These tests include single-inclusive particle production, multiplicity distributions, and multi-particle azimuthal and rapidity correlations.