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Elliptic Flow from fKLN Initial Conditions

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A current goal of relativistic heavy ion collisions experiments is the search for a Color Glass Condensate as the limiting state of QCD matter at very high density. In viscous hydrodynamics simulations, a standard Glauber initial condition leads to estimate $4\pi\eta/s \sim 1$, while a Color Glass Condensate modeling leads to at least a factor of 2 larger η/s . Within a kinetic theory approach based on a relativistic Boltzmann-like transport simulation, we point out that the out-of-equilibrium initial distribution proper of a Color Glass Condensate reduces the efficiency in building-up the elliptic flow. We study the dynamical impact of Color Glass Condensate at both RHIC and LHC energies. Our main result at RHIC energy is that the available data on v_2 are in agreement with a $4\pi\eta/s \sim 1$ also for Color Glass Condensate initial conditions, opening the possibility to describe self-consistently also higher order flow, otherwise significantly underestimated, and to pursue further the search for signatures of the Color Glass Condensate.

[1] M. Ruggieri, F. Scardina, S. Plumari, V. Greco, arXiv:1303.3178 [nucl-th].

[2] S. Plumari, V. Baran, M. Di Toro, G. Ferini, V. Greco, Phys.Lett. B689 (2010) 18-22.

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