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Bose Enhancement in the dilute-dense limit

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The ridge structure in two-particle correlations produced in high multiplicity collisions at the LHC have been examined in the Color Glass Condensate formalism. In this formalism it was found that in the dilute-dilute nucleus limit, corresponding to glasma graphs, the ridge structure was due to the Bose enhancement associated with two-gluon production, with a successful phenomenology developed on this basis. It was an open question whether or not Bose enhancement existed beyond this leading limit. Using the full dilute-dense result for two-gluon correlations we identify the contributions that survive the higher order saturation corrections in the target. We do find a Bose enhanced component of the correlation function when the two produced gluons have either equal transverse momentum or equal and opposite transverse momentum. Bose enhancement, in effect, produces a major contribution to the ridge structure in two-particle correlations.

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