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Multiple particle production in the presence of saturation

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In the context of high density QCD systems, the high occupancy numbers make it convenient to consider the strong classical fields as the appropriate degrees of freedom. High energy collision experiments are particularly sensitive to the correlators of these multiple sources by means of the multiple scattering undergone by the produced particles. By carefully studying the color structure of several multi-particle production processes in the presence of strong color fields, we show that higher point correlations are suppressed by powers of the number of colors Nc and, in particular, can be neglected in the large-Nc limit. The leading contribution to any process under this particular setup can be written in terms of only the two-point (dipole) and four-point functions (quadrupole).

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