

The gluon condensation at high energy hadron collisions

The corrections of gluon fusion to the BFKL equation are discussed and it results in a new evolution equation. Using the available saturation models as input, we find that the new evolution equation has the chaos solution with positive Lyapunov exponents in the perturbative range, the distribution show a sharp peak at the critical momentum. We find that this gluon condensation effect is caused by a new kind of shadowing-antishadowing effects, and it leads to a series of unexpected effects in high energy hadron collisions including astrophysical events.

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