

# Low X workshop



Contribution ID : 2

## Off-shell helicity amplitudes in high-energy factorization

Tuesday 04 Jun 2013 at 11:50 (00h20')

### Content :

In the Catani-Ciafaloni-Hautmann high-energy factorization approach a cross section is expressed as a convolution of unintegrated gluon densities and a gauge-invariant hard process, in which two incoming gluons are off-shell with momenta satisfying certain high-energy kinematics. We present two methods of evaluating the tree-level hard process with multiple final states. The first one assumes that only one of the gluons is off-shell and relies on the Slavnov-Taylor identities. Such asymmetric configuration of incoming gluons is phenomenologically important in low-x probing by forward processes. The second method deals also with two off-shell gluons and is based on the analytic continuation of the off-shell gluons momenta to the complex space. The method was implemented into a computer program and proved to be very efficient for phenomenological applications. For gluonic final states the results of both methods are straightforwardly related to Lipatov's effective vertices in quasi-multi-regge kinematics.

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