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On the one-loop calculations in Lipatov's EFT

Tuesday, 31 July 2018 15:20 (30 minutes)

The structure of one-loop calculations in Lipatov's Gauge-invariant EFT for Multi-Regge processes in QCD will be reviewed. I will focus on rapidity divergences, their relation with Reggeization of t-channel particles, consistent regularization and techniques to compute one-loop integrals with several scales. Preliminary results of this work have been published in [1]. The new results include computation of three-point integrals with two scales and one or two light-cone propagators. The results can be applied to the computation of NLO corrections to BFKL equation with Reggeized gluons/quarks/scalars in t-channel, computation of NLO corrections to the transition kernels with several Reggeons, which appear in High-Energy QCD, and to the computation of NLO corrections in Parton Reggeization Approach.

References:

[1] M. Nefedov and V. Saleev, "On the one-loop calculations with Reggeized quarks," Mod. Phys. Lett. A 32, no. 40, 1750207 (2017) [arXiv:1709.06246 [hep-th]].

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