## XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects



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## NLO description of the photoproduction of a diphoton with a large invariant mass

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Photoproduction of two photons is the simplest example allowing the study of QCD factorization in a family of  $2 \rightarrow 3$  processes. Because of the C-symmetry, the amplitude is sensitive only to valence quarks GPDs, which makes it interesting for the GPD extraction program. Leading-order calculation, presented in [1], and the subsequent work concerning electroproduction of 2 photons [2], suggest that this process may be experimentally accessible in JLAB.

I will present a new calculation of NLO corrections [3], which provide more accurate predictions and proof of factorization for this process at the one-loop level. I will also discuss the analytical structure of the amplitude, which is way richer than the one of DVCS and TCS cases.

[1] A. Pedrak, B. Pire, L. Szymanowski, and J. Wagner: *Hard photoproduction of a diphoton with a large invariant mass*, Phys. Rev. D 96 (2017), 074008, Erratum Phys. Rev. D 100 (2019), 039901

[2] A. Pedrak, B. Pire, L. Szymanowski, and J. Wagner: *Electroproduction of a large invariant mass photon pair*, Phys. Rev. D 101 (2020) 11, 114027

[3] O. Grocholski, B. Pire, L. Szymanowski, and J. Wagner, in preparation.

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