

First ECFA WORKSHOP.

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Type: **Parallel session talk**

Photo-production at NLO QCD

Thursday 6 October 2022 17:12 (15 minutes)

Photo-production is a non-negligible contribution to cross-sections at lepton—proton and lepton—lepton colliders, amounting to in fact over half of the QCD cross section. In this talk I will discuss the framework in the Sherpa event generator that allows the calculations of both unresolved and resolved photon contributions. I will show comparisons of simulated events at MC@NLO accuracy with data from the LEP and HERA experiments. I will present results for different sensitive observables for a future e+e- collider, motivating further investigations of the hadronic structure of the photon. Finally, I will discuss how these simulations will help in understanding the QCD background as well as the underlying event and allow for more tests of QCD at future lepton colliders.

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