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NNLO QCD Predictions for Triphoton Production

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In this talk, I am going to present fully-differential NNLO QCD corrections to the hadroproduction of three isolated photons. We employ an implementation of the q_T subtraction formalism within Matrix, and the recent analytic computation of the two-loop amplitudes to achieve a fully-flexible calculation of the triphoton production at NNLO accuracy. This process is on the cutting edge of the NNLO multiplicity frontier, being the first $2 \to 3$ process for which NNLO QCD predictions have been calculated. We show that the large NNLO QCD corrections are indispensable to describe the experimental measurements in the broad spectrum of observables. We also discuss perturbative convergence of the fixed-order predictions.

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