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Higher-order corrections at the LHC: current status and prospects

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The upcoming High Luminosity upgrade of the LHC will provide us with experimental data of unprecedented precision. Making sense of the data and exploiting the machine's full potential will require theoretical predictions of equally high precision. In recent years, the theoretical particle physics community has made a tremendous effort to meet the challenge of performing notoriously difficult perturbative calculations in Quantum Field Theory. The current precision frontier for the QCD-dominated processes studied at the LHC lies at the Next-to-Next-to-Leading-Order (NNLO) corrections for $2 \rightarrow 3$ scattering processes. In this talk, I will review the latest developments in higher-order corrections to scattering amplitudes and discuss the prospects in this field of research for the near future.

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