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Towards 2 -> 3 NNLO QCD calculations

Tuesday, September 10, 2019 12:00 PM (25 minutes)

Precise predictions for total and differential cross sections
at hadron colliders became an important corner stone of the LHC physics.
The lack of new 'smoking-gun' physics signals
requires precise comparisons between measurements and Standard Model
predictions to get a
handle on new physics effects. Tremendous efforts have been made to push
perturbative calculations to higher orders such that NNLO QCD calculations are
now state-of-art for most $2 \to 1$ and $2 \to 2$ hard scattering processes.
Upcoming five-point two-loop amplitudes and refined subtractions schemes for
real radiation contributions allow first steps in the direction of $2 \to 3$
scattering processes.
I present novel NNLO QCD results for $2 \to 3$ processes obtained with the
Sector-improved Subtraction Scheme and their phenomenological application.

Primary authors: PONCELET, Rene (Cambridge University); Prof. CZAKON, Michal Wiktor (Rheinisch Westfaelische Tech. Hoch. (DE)); MITOV, Alexander (University of Cambridge (GB))

Presenter: PONCELET, Rene (Cambridge University)

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