

DIS2023: XXX International Workshop on Deep-Inelastic Scattering and Related Subjects



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GENEVA Monte Carlo: status and new developments

Tuesday 28 March 2023 11:30 (20 minutes)

We review the GENEVA Monte-Carlo framework, that combines three theoretical tools used for QCD precise prediction into a single structure.

It gives fully differential fixed-order calculations up to NNLO via N -jettiness subtraction, which are then combined with higher-order resummation in the 0-jettiness resolution variable. This resummation is carried out to NNLL', matched to the appropriate fixed-order prediction. The resulting parton-level events are further combined with parton showering provided by PYTHIA8 and also other showers, giving a direct interface to hadronization and MPI simulations.

GENEVA consistently improves perturbative accuracy away from the fixed-order regions, providing event-by-event a systematic estimate of the theoretical perturbative uncertainties.

In this talk we highlight its main features, discussing some new improvements involving both color singlet productions, as well as for the production of final states with heavy coloured partons and jets.

Submitted on behalf of a Collaboration?

No

Participate in poster competition?

No

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