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WW + jet: compact analytic results

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In this work we report on a next-to-leading order calculation of WW + jet production at hadron colliders, with subsequent leptonic decays of the W-bosons included. The calculation of the one-loop contributions is performed using generalized unitarity methods in order to derive analytic expressions for the relevant amplitudes. These amplitudes have been implemented in the parton-level Monte Carlo generator MCFM, which we use to provide a complete next-to leading order calculation. Predictions for total cross-sections, as well as differential distributions for several key observables, are computed both for the LHC operating at 14 TeV as well as for a possible future 100 TeV proton-proton collider.

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