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jet substructure techniques with the production of Z+jet at the LHC

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Jet substructure techniques have an important role in high-energy collider physics computations of the hard processes. In this poster, we present the study of the production of a Z-boson plus one jet from pp collision .We show an analytical computation of the jet mass observable at leading order and next to leading order, implementing the trimming technique. As a consequence, after applying the clustering algorithm we note the contribution of the clustering logs and non-global logs that should be taken into consideration. Moreover, we shed light on preliminary results from the Monte Carlo event generators madgraph and pythia8 for the case of NLO computation. We compare the analytical part with the simulated one and use Rivet to analyze the resulting hepmc file .

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