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A Monte-Carlo simulation study of Underlying Event at hadron colliders

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We perform energy dependence study for underlying event activity in hadron-hadron collisions by using monte-carlo event generators HERWIG++, MADGRAPH and PYTHIA8 with different tunes. Study is performed at various energies between 1 TeV to 14 TeV. The underlying event activity is important for the complete understanding of standard model processes and also for the search of new physics beyond standard model. The study also provides inputs for testing and improving current QCD theories. A good understanding of underlying event activity is important for the complete simulation of the collision events at hadron colliders. The Z+jets events are privately generated using different event simulators. The generated Z-boson will be used as reference direction to define the regions sensitive towards underlying event activity. The underlying event activity is measured in terms of track multiplicity, average transverse momentum, particle and energy densities in the regions sensitive to underlying event activity for the different energies.

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