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Performance of various event generators in describing multijet final states at the LHC

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At the LHC, the most abundant processes which take place in proton-proton collisions are the generation of multijet events. These final states rely heavily on phenomenological models and perturbative corrections which are not fully understood, and yet for many physics searches at the LHC, multijet processes are an important background to deal with. It is therefore imperative that the modeling of multijet processes is better understood and improved. For this reason, a study has been done with several state-of-the-art Monte Carlo event generators, and their predictions are tested against both ATLAS and CMS data using the Rivet framework. The results display a mix of agreement and disagreement between the predictions and data, depending on which variables are studied. Several points for improvement on the modeling of multijet processes are stated and discussed.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD, N/A)?

PhD

Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

Yes

Primary author: Mr VON BUDDENBROCK, Stefan (University of the Witwatersrand)

Presenter: Mr VON BUDDENBROCK, Stefan (University of the Witwatersrand)

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