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Comparisons of Dark Showers between Herwig and Pythia

We present an ongoing effort to compare the new Herwig Dark Showers code with the existing Pythia Hidden Valley module. In addition to the physical parameters of the model, an event generator requires a number of semi-empirical settings to be tuned, particularly in the hadronisation. Since no dark showers have yet been observed, the best choices for these parameters can only be estimated using intuition from QCD. The aim of these studies is to determine which observables are consistent between generators and for variations of the tunable parameters, and hence are more reliable for use in future analyses, and identify pitfalls for parameter setting. This talk will introduce the theoretically motivated benchmarks proposed in the Snowmass white paper on dark showers, which are used in this study, and present initial lessons learnt from attempting consistent parameter setting between generators.

Are you happy to have the meeting recorded?

Yes

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