

Precision Physics at the LHC

I show how high-energy measurements of both Drell-Yan and multi-jet cross sections at the LHC can serve as powerful probes of new physics.

Dimension-6 operators, from the Standard Model Effective Field Theory, modify the high energy behavior of the Standard Model gauge boson propagators. Existing measurements of the dilepton invariant mass spectrum from neutral current Drell-Yan at 8 TeV, and dijet invariant mass spectrum at 7 TeV are able to achieve a precision which, in the case of Drell-Yan is already comparable to the one achieved at LEP.

The 13 TeV LHC will elevate these tests of the electroweak and strong sectors of the Standard Model to a new precision frontier.

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