Phenomenology 2018 Symposium



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Digging Deeper for a Monojet Excess in the LHC Data

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Without clear evidence of new physics in LHC data thus far, it has become increasingly important to critically analyze the data in a model-independent fashion. We present such a technique, which we call "Rectangular Aggregations", and apply it to a CMS jet+MET SUSY search. We identify a previously overlooked excess with low jet multiplicity and low MET and HT, which we refer to as a "monojet excess". In the combined ATLAS and CMS data, we find a local (global) preference of $3.3 (2.5)\sigma$, when interpreted as the resonant production of a heavy colored state decaying to a quark and a massive invisible particle. Some suggestions for improved sensitivity to this model as an explanation for this excess are also discussed.

Summary

Author: Dr DIFRANZO, Anthony (Rutgers) Presenter: Dr DIFRANZO, Anthony (Rutgers) Session Classification: SUSY I