

A data driven search for non-resonant features in the dilepton spectra at ATLAS

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The ATLAS experiment is conducting a search for high mass resonant and non-resonant features in dilepton (ee , $mumu$) spectra using the full Run-2 dataset. Models with new contact interactions (CI) and large extra dimensions (ADD) can manifest themselves as a slight enhancement in the high mass tail of the spectrum. The challenge is to develop a background model that can constrain the shape of the tail, and still provide sensitivity to new features. We present a data driven strategy designed to search for such features. The method has been optimized for sensitivity to CI, but it is sensitive to a wide variety of models and features.

Presenter: WHITE, Aaron (University of Michigan)

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