Contribution ID: **58** Type: **not specified**

Model-agnostic search for dijet resonances with anomalous jet substructure with the CMS detector

Friday, 10 November 2023 10:15 (15 minutes)

We present a model-agnostic search for new physics in the dijet final state using five different novel machine-learning techniques. Other than the requirement of a narrow dijet resonance, minimal additional assumptions are placed on the signal hypothesis. Signal regions are obtained utilizing multivariate machine learning methods to select jets with anomalous substructure. A collection of complimentary methodologies – based on unsupervised, weakly-supervised and semi-supervised paradigms – are used in order to maximize the sensitivity to unknown New Physics signatures.

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Session Classification: Results, Observables & Techniques