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Searching for new physics detecting anomalies in jets

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A model-agnostic search for new physics in the dijet final state with the CMS experiment is presented. Other than the requirement of a narrow dijet resonance with a mass in the range of 1800-6000 GeV, minimal additional assumptions are placed on the signal hypothesis. Search regions are obtained by utilizing multivariate machine learning methods to select jets with anomalous substructure. A collection of complementary anomaly detection methods –based on unsupervised, weakly-supervised and semi-supervised algorithms –are used in order to maximize the sensitivity to unknown new physics signatures.

Primary authors: SEIDITA, Roberto (Istituto Nazionale di Fisica Nucleare); LIAO, hongbo

Presenter: SEIDITA, Roberto (Istituto Nazionale di Fisica Nucleare)

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