

Jet physics with ATLAS

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New physics searches using jet substructure are actively performed at the LHC era. There are several new techniques with ATLAS to extract the substructure information more precisely. A new particle-flow algorithm, unified-flow objects (UFOs), is recently developed to improve the resolution of the substructure variables. On top of that, to identify boosted W/Z /top/H decaying to hadrons, as well as unknown new particles which form the characteristic jet substructure, some new approaches are introduced, using some machine-learning techniques and/or new substructure representatives e.g. Lund-plane variables. The modeling of the jet substructure is an important key to improve the sensitivity. In this talk, I will summarize recent developments of the ATLAS jet substructure, and the status of the new physics searches using it.

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