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Reconstruction, Measurements, and Searches at Colliders



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Searches for boosted resonances (non-diboson) and semi-visible jets with the ATLAS detector

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Many new-physics signatures at the LHC produce highly boosted particles, leading to close-by objects in the detector and necessitating jet substructure techniques to disentangle the hadronic decay products. This talk will illustrate the use of these techniques in recent ATLAS searches for heavy W' and Z' resonances in top-bottom and di-top final states, as well as in searches for vector-like quarks or dark matter, using the full Run 2 dataset. Additionally, an analysis searching for semi-visible jets, with a significant contribution to missing transverse momentum, is presented. This type of topologies can arise in strongly-interacting dark sectors.

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