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Searches and techniques for boosted resonances (non-diboson) 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 searches for vector-like quarks, using the full Run 2 dataset. It will explain the techniques used, including new top-tagging techniques using machine learning and the use of large-radius jets containing electrons.

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