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Measurement of jet substructure and jet fragmentation using the ATLAS detector

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Measurements of the internal properties of jets allow QCD to be studied at a new regime at a hadron collider. In this talk, we discuss recent measurements of jet substructure and jet fragmentation that were performed using data collected by the ATLAS experiment at a centre-of-mass energy of $\sqrt{s}=13$ TeV. For jet substructure, a comprehensive suite of substructure observables are measured for jets reconstructed with the soft-drop algorithm applied. In addition, a measurement of the Lund Plane is performed using charged particles. The fragmentation properties of jets, such as the jet charge and summed fragmentation function, are also measured using charged particles. Finally, if ready, a measurement of the fragmentation properties of jets containing B-hadrons will also be presented. All of the measurements are corrected for detector effects and are compared to the predictions of state-of-the-art Monte Carlo event generators.

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