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Jet Correlation Measurements at ATLAS and the determination of the strong coupling constant

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The production of multi-jet final states at hadron colliders probes pQCD at several mass scales. The processes can also be used to probe the gluon density function of the proton. The ATLAS collaboration has used multi-jets events, recorded at a center of mass energy of 8 TeV, to measure the transverse energy-energy correlations, its asymmetry and the dijet azimuthal decorrelation. These measurements are particularly sensitive to the strong coupling constant with a reduced model dependency. The resulting value of $alpha_s$ and the corresponding tests of the renormalization group equation will be presents.

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