## **EPS-HEP2023** conference



Contribution ID: **750** Type: **Parallel session talk** 

## Determination of the strong coupling constant from LHC dijet data

Tuesday 22 August 2023 17:10 (15 minutes)

The production of dijet events containing at least two jets is among the largest cross sections at the LHC, with QCD predictions directly sensitive to the strong coupling constant. Dijet cross section measurements from ATLAS and CMS, at center-of-mass energies of 7, 8 and 13 TeV are exploited for the determination of the strong coupling constant, using state-of-the-art next-to-next-to-leading order QCD predictions from NNLOJET which include subleading colour contributions. These are interfaced to the grid frameworks of APPLgrid and fastNLO. The large kinematic range of the dijet data allows for a comprehensive test of the renormalisation scale dependence of QCD.

## **Collaboration / Activity**

NNLOJET, APPLgrid, fastNLO

Primary authors: HUSS, Alexander (CERN); GWENLAN, Claire (Oxford); BRITZGER, Daniel (Max-Planck-

-Institut für Physik, München); RABBERTZ, Klaus (KIT); SUTTON, Mark (Sussex)

Presenter: BRITZGER, Daniel (Max-Planck-Institut für Physik, München)

Session Classification: T06 QCD and Hadronic Physics

Track Classification: QCD and Hadronic Physics