



Contribution ID: 23

Type: Oral

## Prospects of QCD & Lund Jet Plane Studies at FCC-ee

This analysis describes prospects of the sensitivity of the strong coupling constant  $\alpha_s$  at the FCC-ee using studies based on 3-jet/2-jet cross-section ratio ( $R_{3/2}$ ) and the Lund Jet Plane (LJP) representation. Preliminary results demonstrate the dependence of  $R_{3/2}$  on  $\alpha_s$ , providing key insights into the re-interpretation of these measurements through QCD studies. For LJP studies, preliminary representations of primary and secondary LJPs are presented, utilizing jet clustering and declustering algorithms for the  $e^+e^-$  collision environment. Additionally, the other potentials of the LJP tool at FCC-ee are emphasized.

### Field of contribution

Experiment

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**Track Classification:** Future experiments and detector development