

# DIS2023: XXX International Workshop on Deep-Inelastic Scattering and Related Subjects



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Type: **Parallel talk**

## Studying the Lund Jet Plane at LHCb

*Tuesday, 28 March 2023 14:20 (20 minutes)*

The substructure of QCD jets has been the subject of intense investigation following the development of infrared and collinear safe clustering algorithms and observables. A particularly illuminating observable to study the radiation patterns of light and heavy partons is the Lund jet plane (LJP), where various types of emissions such as soft-collinear, hard-collinear, and non-perturbative emissions as well as initial-state radiation and underlying event can be separately identified. By reclustering jets using the Cambridge/Aachen algorithm, then declustering them following the hardest/heavy-flavor branch, we can construct a representation of the LJP. This poster presents a status update on the LJP for light-, charm-, and beauty-initiated jets at the LHCb experiment, a well-optimized forward detector for studying heavy flavor physics. We expect mass effects to be revealed in various regions of the LJP such as the leading particle effect and the dead-cone effect.

### Submitted on behalf of a Collaboration?

Yes

### Participate in poster competition?

Yes

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