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The primary Lund jet plane in pp collisions at 13 TeV with ALICE

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Precision measurements of jet substructure are used as a probe of fundamental QCD processes. The primary Lund jet plane density is a two-dimensional visual representation of the radiation off the primary emitter within the jet that can be used to isolate different regions of the QCD phase space. We present a new measurement with the ALICE detector of the primary Lund plane density for inclusive charged-particle jets in pp collisions at $\sqrt{s} = 13$ TeV, in the transverse momentum range [20,120] GeV/c.This is the first measurement of the Lund plane density in an intermediate jet p_{T} range where hadronization and underlying event effects play a dominant role. The projections of the Lund plane density onto the splitting scale k_{T} and splitting angle ΔR axis are shown, highlighting the perturbative/non-perturbative and wide/narrow angle regions of the splitting phase space. Through a 3D unfolding procedure, the Lund plane density is corrected for detector effects which allows for quantitative comparisons to MC generators to provide insight into how well generators describe different features of the parton shower and hadronization.

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