Jet Asymmetries in the ATLAS Level 1 Calorimeter Trigger[1] JO-
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Boosted objects are reconstructed particle decay products with transverse momenta
that are considerably greater than their respective rest masses. Such objects are
interesting for new physics searches using the ATLAS detector at the Large Hadron
Collider (LHC). We create and study algorithms used to better discern boosted
objects in the Phase-I upgrade of the Level-I trigger electronics in ATLAS. In par-
ticular, we present an algorithm which exploits the asymmetries in the kinematics
of jets arising from boosted top quarks compared to jets arising from gluons, using
0.2x0.2 towers (in η-ϕ) of the global feature extractor (gFEX), a component of the
Level-1 calorimeter trigger system for the Phase-I upgrade. The algorithm, whose
parameters are optimized for signal efficiency and background rejection, has the
potential to be used in field programmable gate arrays (FPGAs); thus simplicity,
speed, and stability are emphasized.

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