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Study of Jet Substructure Variables with the SiFCC Detector at 100 TeV

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We study the performance of jet substructure variables with a detector designed for very high energy proton collisions, the SiFCC detector. The two-prong jets from Z'->WW and three-prong jets from Z'->ttbar are compared with the background from light quark jets at the same energy. The calorimeter geometry is benchmarked in various configurations in order to understand the impact of granularity on variables such as groomed jet mass, Njettiness and energy correlations within the jets. We present results on signal efficiency and background rejection using full GEANT simulations.

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