

Abstract Submitted
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Jet identification and energy scale corrections in a high-luminosity environment at the LHC DAVID MILLER, Stanford Linear Accelerator Center, ATLAS COLLABORATION — The LHC physics program will ultimately probe not only the highest energies ever produced in the laboratory but also the most numerous and frequent collisions between hadronic particles ever. These luminosities will produce hadronic jets from simultaneous proton-proton collisions in unprecedented numbers, presenting extreme challenges for jet identification, calibration and missing energy (E_T) measurements. We present a unified jet energy scale program designed to account for these uncorrelated soft interactions using the advanced technique of associating calorimeter jets to reconstructed primary vertices using tracks. This approach suppresses the background contributions from these “pile-up” interactions and allows for jet-by-jet energy scale corrections for multiple interactions. This approach is shown to be vital for coping with the unparalleled luminosity of the LHC.

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