

Abstract Submitted
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Study of the Pulse Shapes from the 3-in-1 Cards at ATLAS Tile-Cal Y. CHENG, M. DUNFORD, Y.K. KIM, The University of Chicago, ATLAS COLLABORATION — The ATLAS Tile Calorimeter (TileCal) is designed to measure energy depositions in a single cell from 30 MeV to 2 TeV, and we expect to calibrate its response to 1-2%. We present studies of pulse shapes from the front-end electronics of the TileCal and infer their impact on minimum bias pile-up events, especially at high luminosity. High and low gain signals were obtained from both CERN and the University of Chicago test benches, using both the charge injection system and LED. In our studies, we quantify pulse-shapes and undershoot, measure card-to-card variations, and then compare these pulse shapes to the reference shapes used in ATLAS simulation. By running the TileCal pulse shape reconstruction using both the standard shapes in simulation and the shapes from test bench measurements, we are able to investigate the sensitivity of the reconstruction procedure to differences in pulse shape.

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