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Response of gap/crack scintillators of the Tile Calorimeter of the ATLAS detector to isolated muons from $W \rightarrow \mu\nu$ events.

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The ATLAS Tile Calorimeter is a hadronic sampling calorimeter that plays a major role in jet energy scale measurements. Accurate reconstruction of jets a vital role for precision measurements of the Standard Model and for searches of physics beyond the Standard Model. The jet energy scale is measured assuming uniformity of response in the azimuthal direction of both the Liquid Argon and Tile calorimeters. In this study, the response of the gap/crack scintillators of Tile calorimeter is measured using isolated muons from $W \rightarrow \mu\nu$ events. The response of the scintillating cells is quantified by measuring the amount of energy deposited per unit length in both data and Monte Carlo simulation to evaluate the response uniformity over the azimuthal direction.

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