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Jet and E_T^{miss} Improvement Using Track Information in Atlas
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We present a new technique that uses tracks to improve the energy resolution of calorimeter jets. The method relies on the fact that jet energy response depends on the jet particle composition, which can be determined, on a jet-by-jet bases, using track information. The new algorithm corrects the jet energy response as a function of the fraction of charged particle energy, defined as the ratio of track-jet over calorimeter-jet transverse momentum (f_{trk}). Preliminary studies with ATLAS full simulation show a 20% improvement in the fractional jet energy resolution with the new track-based energy response and an improvement in missing transverse energy scale. Future improvements include the use of additional track-based variables, like the fraction of transverse momentum carried by the leading track.

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