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Combination Methods for In-Situ Jet Calibration in ATLAS

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The energy and mass of jets measured with the ATLAS detector are calibrated through a multi-step process. In the last step of this chain, known as the residual in-situ calibration, events with a well-measured feature, such as the p_T of a photon or the mass of a top, are used as reference to correct the calibration scale in-situ and estimate its uncertainty.

In order to constrain the Jet Energy Scale (JES) and the Jet Mass Scale (JMS) over the widest possible range of phase-space, several such techniques are combined. The response measurements and their uncertainties are then combined to give a continuous and smooth calibration scale across p_T and mass.

This poster describes the procedure to combine these various techniques, with particular emphasis on the combination method and its features. We will also present the most recent results on the ATLAS jet energy and mass scale uncertainties.

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