

Mass and energy calibration of hadronic jets using DNN in ATLAS

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Because of the nature of QCD interactions with matter, the measured energies and masses of hadronic jets have to be calibrated before they are used in physics analysis. The correction depends on many characteristics of the jets, including the energy and mass themselves. Obtaining the correction is thus a multidimensional regression problem for which DNN is a well suited approach.

In practice, several difficulties have to be solved, leading to envisage doubled NN, dedicated loss functions or introducing input features annotations. We describe these difficulties, present the solutions we tested and describe the overall performances compared to the standard approach of the ATLAS jet calibration.

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