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## Improvement of missing transverse momentum reconstruction for ATLAS experiment at LHC

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The performance of missing transverse momentum (MET) determination using a new algorithm is presented. The peak luminosity of the LHC in 2017 data-taking reached a new record of  $1.90 \cdot 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$  and it is aiming to achieve higher luminosity after up-coming upgrades of the Large Hadron Collider (LHC) and produce a larger number of interactions per bunch crossing  $\langle \mu \rangle$ . Such increase in pile-up interactions will pose a challenge to the existing MET algorithm. The new pile-up fit (PUfit) algorithm is designed to reduce the sensitivity of the MET to pile-up collisions. The algorithm was tested in di-muon decays of the Z boson in 13 TeV ATLAS data. The Z boson was used as an imaginary source of MET to test and calibrate the algorithm. The estimated resolution and scale were then compared to that produced by the standard offline algorithm. Results of these comparisons will be presented and discussed in this talk.

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