The following full text is a publisher's version.

For additional information about this publication click this link.
http://hdl.handle.net/2066/179149

Please be advised that this information was generated on 2018-03-02 and may be subject to change.
Corrigendum

Corrigendum to: “Measurement of the $t\bar{t}$ production cross-section using $e\mu$ events with $b$-tagged jets in $pp$ collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector” [Phys. Lett. B 761 (2016) 136–157]

The ATLAS Collaboration

A R T I C L E   I N F O

A B S T R A C T

This paper describes a measurement of the inclusive top quark pair production cross-section ($\sigma_{t\bar{t}}$) with a data sample of $3.2 fb^{-1}$ of proton–proton collisions at a centre-of-mass energy of $\sqrt{s} = 13$ TeV, collected in 2015 by the ATLAS detector at the LHC. This measurement uses events with an opposite-charge electron-muon pair in the final state. Jets containing $b$-quarks are tagged using an algorithm based on track impact parameters and reconstructed secondary vertices. The numbers of events with exactly one and exactly two $b$-tagged jets are counted and used to determine simultaneously $\sigma_{t\bar{t}}$ and the efficiency to reconstruct and $b$-tag a jet from a top quark decay, thereby minimising the associated systematic uncertainties. The cross-section is measured to be:

$$\sigma_{t\bar{t}} = 818 \pm 8 \text{ (stat)} \pm 27 \text{ (syst)} \pm 19 \text{ (lumi)} \pm 12 \text{ (beam)} \text{ pb},$$

where the four uncertainties arise from data statistics, experimental and theoretical systematic effects, the integrated luminosity and the LHC beam energy, giving a total relative uncertainty of 4.4%. The result is consistent with theoretical QCD calculations at next-to-next-to-leading order. A fiducial measurement corresponding to the experimental acceptance of the leptons is also presented.

It has been found that the acceptance $A_{e\mu}$ values given in Section 4 of the paper correspond to the values before applying the detector acceptance cuts, $p_T > 25$ GeV and $|\eta| < 2.5$. The correct acceptance $A_{e\mu}$ values within the detector acceptance are about 1.4% (instead of 2.7%) including $\tau$ decays, and 1.2% (instead of 2.3%) excluding $\tau$ decays.

This change does not have any impact on the fiducial cross-section result or in any other number presented in the paper. $A_{e\mu}$ is not used in the extraction of the fiducial cross-section, it is given for reference as the prediction from the baseline $t\bar{t}$ POWHEG+PYTHIA6 MC sample. The fiducial cross-section is calculated using Eq. (1) with $G_{e\mu}$ replacing $\epsilon_{e\mu}$. In the total cross-section $\epsilon_{e\mu}$ corresponds to $\epsilon_{e\mu} = A_{e\mu} G_{e\mu}$.

DOI of original article: http://dx.doi.org/10.1016/j.physletb.2016.08.019.