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Measurement of differential cross sections and W^+/W^- cross-section ratios for W boson production in association with jets at $\sqrt{s}=8$ TeV with the ATLAS detector

The ATLAS Collaboration

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Erratum: Measurement of differential cross sections and W^+/W^- cross-section ratios for W boson production in association with jets at $\sqrt{s} = 8$ TeV with the ATLAS detector



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Two additions impacting tables 3 and 4 in ref. [1] are presented in the following. No significant impact is found for other results or figures in ref. [1]. The corrected versions of the tables 3 and 4 are presented below.

Table 3 displays the corrected luminosity uncertainty compared to ref. [1] which was found to be missing a global 1.9% uncertainty [2] from the luminosity that needs to be added in a fully correlated way to the quoted luminosity uncertainty values. Due to its global nature, this luminosity uncertainty contribution is not shown in any of the figures in ref. [1]. The HEPdata record [3] is updated to properly reflect the change.

In the updated tables 3–4, the treatment of the statistical correlations between bins in the case of inclusive jet multiplicities is improved, leading to small variations in the numbers for other uncertainty sources. On the figures of ref. [1], the effect is not visible. The HEPdata record [3] had already been provided with the statistical correlations properly taken into account.

	Inclusive	≥ 1 jet	≥ 2 jets	≥ 3 jets	≥ 4 jets	≥ 5 jets	≥ 6 jets	≥ 7 jets
Jet energy scale	0.1	7.5	10	13	18	27	38	55
Jet energy resolution	0.5	8.8	9.9	12	14	15	18	22
b -tagging	0.1	0.5	1.5	3.8	8.3	15	23	33
Electron	1.1	1.4	1.4	1.5	1.8	2.2	2.6	3.3
E_T^{miss}	1.1	2.6	4.2	5.5	7.1	8.8	12	14
Multijet background	0.5	1.3	2.1	2.6	2.4	4.8	9.1	12
Top quark background	<0.1	0.2	0.8	2.5	5.7	10	15	22
Other backgrounds	<0.1	0.1	0.2	0.3	0.5	1.0	1.7	2.6
Unfolding	4.7	4.1	4.9	4.4	4.0	4.9	7.8	6.2
Other	0.3	0.8	1.0	2.1	4.6	8.7	14	21
Luminosity	1.9	2.1	2.3	2.6	3.1	3.9	4.8	6.0
Total systematic uncert.	5.4	13	16	20	27	38	55	78

Table 3. Relative systematic uncertainties in the measured W +jets cross sections in percent as a function of the inclusive jet multiplicity. The uncertainty from b -tagging includes the uncertainties in the b -tagged jet identification and misidentification efficiencies as well as the impact of $W+c$, $c\bar{c}$, $b\bar{b}$ cross sections in the extrapolation from the signal region to the fiducial region. *Other backgrounds* summarises the impact of Z and diboson cross sections as well as the statistical uncertainty in the background estimates. *Other* combines uncertainties in the pileup modelling and the impact of matching jets to the primary vertex. The luminosity uncertainty includes a global uncertainty of 1.9%, in addition to the components discussed in the paper [1].

	Inclusive	≥ 1 jet	≥ 2 jets	≥ 3 jets	≥ 4 jets	≥ 5 jets	≥ 6 jets
Jet energy scale	<0.1	0.3	1.2	2.3	3.8	9.1	17
Jet energy resolution	0.1	0.7	1.6	2.5	2.6	3.0	4.6
b -tagging	<0.1	0.2	0.5	1.5	4.2	9.4	17
Electron	0.1	0.1	0.1	0.1	0.4	0.9	1.5
E_T^{miss}	0.1	0.8	1.9	2.8	3.8	5.5	6.5
Multijet background	0.3	1.2	2.9	3.2	5.9	15	27
Top quark background	<0.1	0.1	0.3	1.2	3.3	7.0	12
Other backgrounds	<0.1	0.1	0.2	0.3	0.7	1.7	2.8
Unfolding	0.6	0.5	0.6	0.7	1.1	3.1	3.7
Other	<0.1	0.1	0.3	0.9	2.4	6.4	12
Luminosity	<0.1	<0.1	0.1	0.2	0.5	1.1	1.8
Total systematic uncert.	0.7	1.8	4.1	5.9	10	23	41

Table 4. Relative systematic uncertainties in the measured $(W^+ + \text{jets})/(W^- + \text{jets})$ cross-section ratio in percent as a function of the inclusive jet multiplicity. The uncertainty from b -tagging includes the uncertainties in the b -tagged jet identification and misidentification efficiencies as well as the impact of $W+c$, $c\bar{c}$, $b\bar{b}$ cross sections in the extrapolation from the signal region to the fiducial region. *Other backgrounds* summarizes the impact of Z and diboson cross sections as well as the statistical uncertainty in the background estimates. *Other* combines uncertainties in the pileup modelling and the impact of matching jets to the primary vertex.

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