

Erratum: Search for quantum black hole production in lepton + jet final states using proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector
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In the original publication, the theoretical cross sections for quantum black hole (QBH) production and decay were presented using inclusive branching fractions, corresponding to decays into any lepton flavor (e , μ , or τ). However, a consistent comparison with the experimental analysis requires the use of exclusive branching fractions that match the lepton channels considered in the data. Accordingly, the theoretical cross section ($\sigma \times Br$) shown in Fig. 4 is rescaled by a factor of $1/3$, reflecting the fact that one lepton (electron or muon) is considered.

These corrections affect the derived limits on the QBH mass M_{th} presented in Table V. The observed limits on ($\sigma \times Br$), corresponding to the updated M_{th} values, are slightly modified for the RS1 model, while those for the ADD model remain unchanged within the quoted precision. This is because at high masses, the limit on ($\sigma \times Br$) does not vary significantly with M_{th} . A corrected version of Table V is provided.

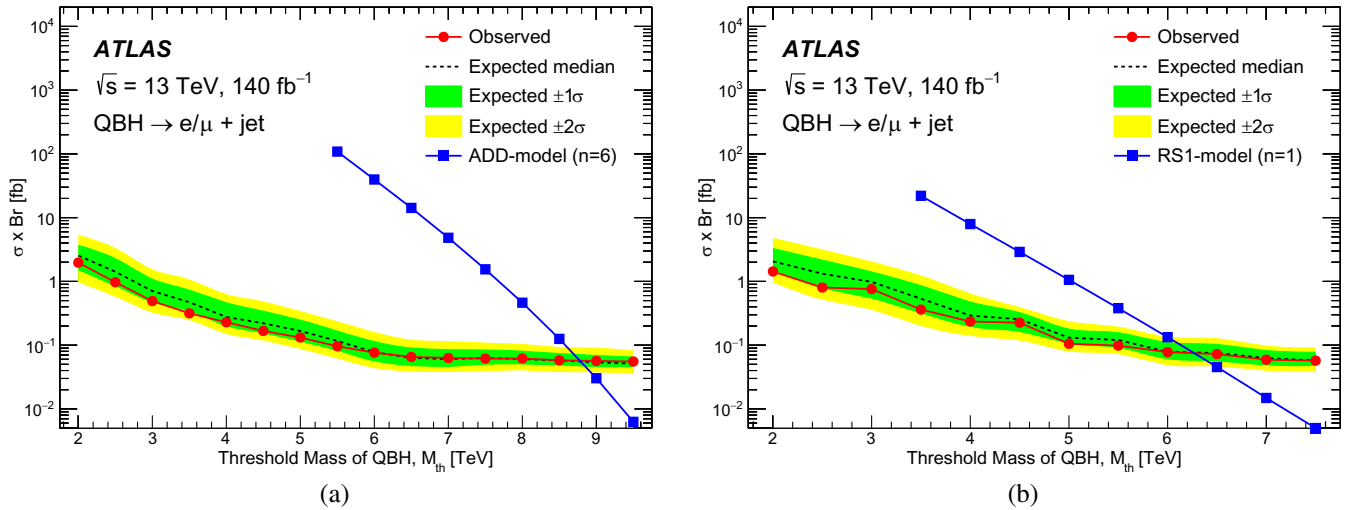


FIG. 4. The combined 95% CL upper limits on $\sigma \times Br$ as a function of M_{th} for QBH production at $M_{th} = M_D$ with decay into lepton + jet for (a) ADD (extra dimensions $n = 6$) and (b) RS1 (extra dimensions $n = 1$). The limits take into account statistical and systematic uncertainties. Circles along the solid red line indicate the mass M_{th} of the signal where the observed limit is computed. The expected limits are shown by the dashed line. The $\pm 1\sigma$ and $\pm 2\sigma$ bands are shown in green and yellow, respectively. The theoretically predicted $\sigma \times Br$ for the QBH production and decay is shown as the solid blue curve with squares. The limits are obtained with pseudoexperiments.

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TABLE V. The lower limits on M_{th} and the upper limits on $\sigma \times Br$ at these mass points for QBHs decaying to a lepton and jet in the ADD and RS1 models. The model-independent upper limits on $\sigma \times Br$ are shown at $m_{\text{inv}} > 5$ TeV.

Channel	ADD	ADD	RS1	RS1	Model-independent
	$\sigma \times Br$ [fb]	M_{th} [TeV]	$\sigma \times Br$ [fb]	M_{th} [TeV]	$\sigma(m_{\text{inv}} > 5 \text{ TeV}) \times Br$ [fb]
Electron + jet	0.091	8.6	0.100	6.1	0.095
Muon + jet	0.083	8.6	0.090	6.2	0.084
Combined	0.057	8.8	0.075	6.3	0.052

In addition, several numerical values quoted in the text require revision. In the last sentence of the Abstract, the values 9.2 and 6.8 are replaced by 8.8 and 6.3, respectively. In the Conclusion, the values 9.2(6.8) are replaced by 8.8(6.3), and the value 3.9 is replaced by 3.5.

These corrections ensure consistency between the theoretical predictions and the experimentally analyzed decay channels. The overall scientific conclusions of the paper remain unchanged.