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Erratum: A Search for Solar Axions and Anomalous Neutrino Magnetic Moment with the Complete PandaX-Ⅱ Data [CHIN. PHYS. LETT. 38 (2021) 011301]

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In our published letter,[1] we have identified a minor error in Figs. 2 and 3. Instead, we have 2111 events in these two plots with 646, 249, 382, and 834 events in Run 9 (20.0 ton·day), Run 10 (19.4 ton·day), Run 11–1 (24.2 ton·day), and Run 11–2 (37.1 ton·day). The mistake is due to an incorrect application of a small energy non-linearity (known as the BLS non-linearity) in making plots, but has no impact to the final results.

Figures 2 and 3 are now updated in this note. The new number of events are also updated in the last row of Table 1 (two typos are also fixed). In addition, the vertical coordinates in Figs. 1(a), 1(b) and 1(c) should be named as normalized events per 0.4 keV, events per keV and events per 0.4 keV, respectively.

Table 1. Summary of the best fit background values and data from the background-only likelihood fit.

Events	Run 9	Run 10	Run 11–1	Run 11–2
^{127}Xe	77.3	3.5	0.0	0.0
Tritium	0.0	49.6	60.1	92.2
^{85}Kr	418.2	51.1	146.0	479.7
Flat ER	148.1	143.6	176.1	270.1
Accidental	1.5	0.8	0.8	1.2
Neutron	0.6	0.4	0.5	0.8
^{136}Xe	2.3	2.2	2.7	4.1
Total	648.1±35.3	251.2±22.1	386.1±32.5	848.1±52.7
Data	646	249	382	834

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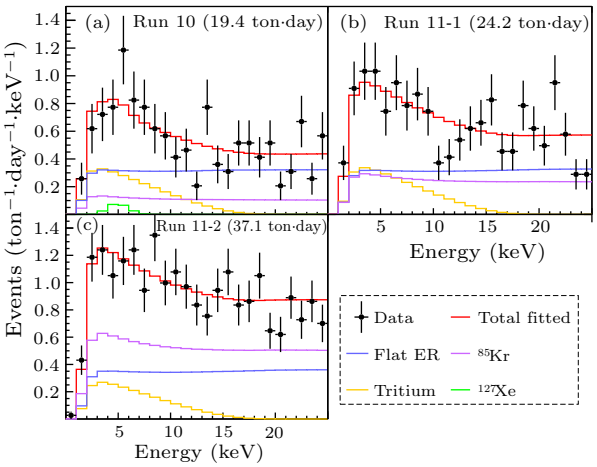

Fig. 2. Electron recoil energy distributions for Runs 10, 11–1, and 11–2 with background-only pre-fits. Likelihood fits are performed in two-dimensional space. The background due to ^{136}Xe, neutron, and accidentals is not drawn in the figure.

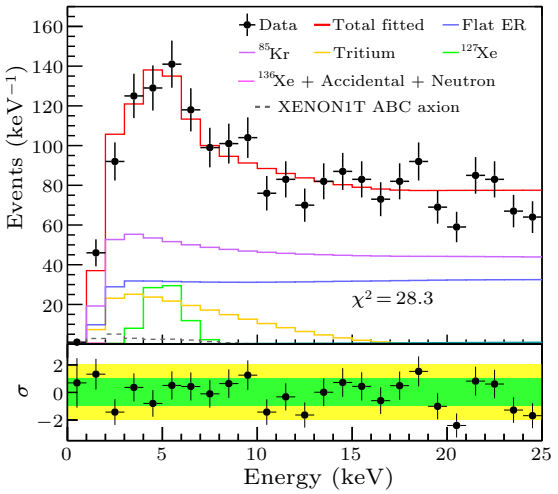

Fig. 3. Low energy spectrum of electron recoil events for the total 100.7 ton·day data. Simultaneous best-fit background contributions are overlaid, where tritium background rate is treated as the same in Run 10 and Run 11. The expected axion signal with XENON1T best-fit signal strength is shown by a dashed grey line.

References

[1] Zhou X P *et al.* (PandaX-II Collaboration) 2021 *Chin. Phys. Lett.* **38** 011301