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Erratum: Improving ANAIS-112 sensitivity to DAMA/LIBRA signal with machine learning techniques

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The original version of this article contained an error in the calculation of the sensitivity projection to the annual modulation signal observed by DAMA/LIBRA. Consequently, some sentences in the text, as well as figures 15 and 16 must be corrected.

In the abstract:

Incorrect: . . . push the ANAIS-112 sensitivity to test the DAMA/LIBRA annual modulation result beyond 3σ with three-year exposure . . .

Correct: . . . push the ANAIS-112 sensitivity to test the DAMA/LIBRA annual modulation result *around* 3σ with three-year exposure . . .

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In section 6 (page 22):

Incorrect: . . . the ANAIS-112 experiment would test the DAMA/LIBRA annual modulation result beyond 3σ sensitivity by applying this new BDT filtering to the three-year exposure, being possible to achieve 5σ sensitivity by extending the data taking for 2–3 more years . . .

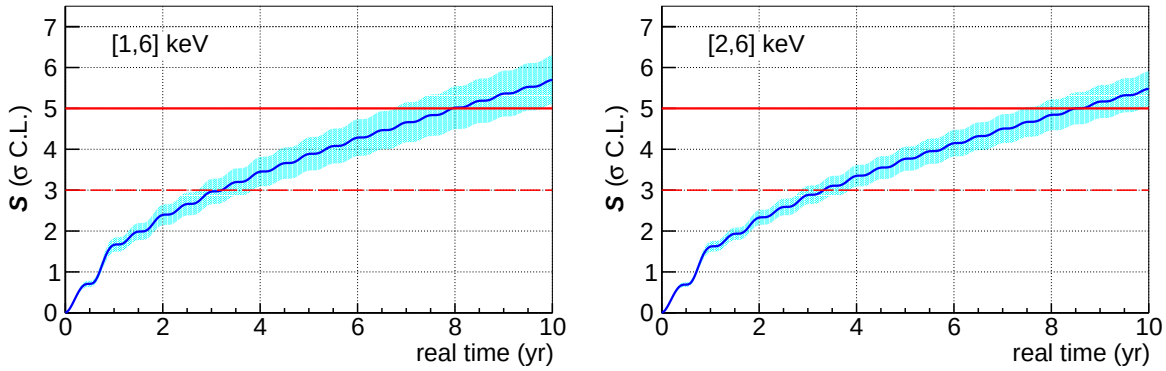
Correct: . . . the ANAIS-112 experiment would test the DAMA/LIBRA annual modulation result *around* 3σ sensitivity by applying this new BDT filtering to the three-year exposure, being possible to achieve 5σ sensitivity by extending the data taking for *3–4* more years . . .

In conclusions (page 24):

Incorrect: . . . pushing the ANAIS-112 sensitivity to test the DAMA/LIBRA annual modulation result beyond 3σ with three-year exposure.

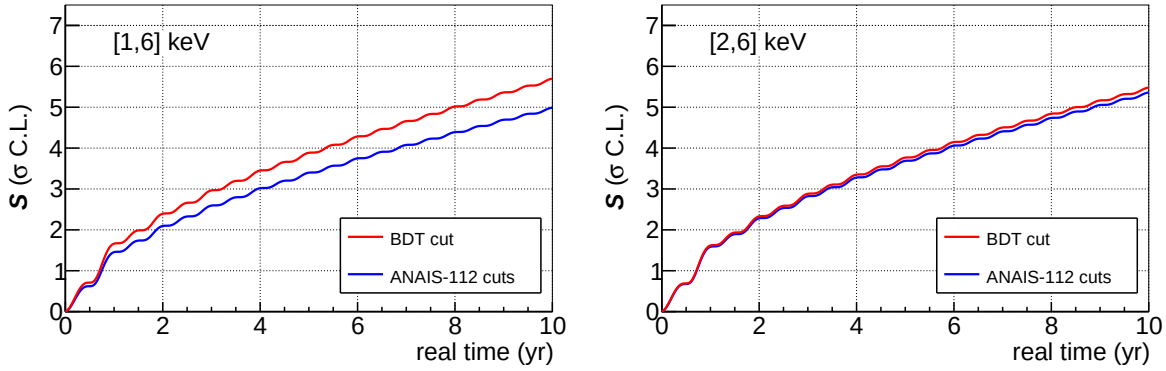
Correct: . . . pushing the ANAIS-112 sensitivity to test the DAMA/LIBRA annual modulation result *around* 3σ with three-year exposure.

Corrected figures 15 and 16 are shown here.



(a) (b)

Figure 15. ANAIS-112 sensitivity to the DAMA/LIBRA signal in σ C.L. units as a function of real time in the [1,6] keV (a) and [2,6] keV (b) energy regions considering decreasing background after applying the BDT event selection. The cyan bands represent the 68% C.L. DAMA/LIBRA uncertainty.



(a) (b)

Figure 16. ANAIS-112 sensitivity to the DAMA/LIBRA signal in σ C.L. units as a function of real time in the [1,6] keV (a) and [2,6] keV (b) energy regions considering decreasing background. The blue lines show our sensitivity projection derived from applying the previous ANAIS-112 filtering procedure, whereas the red lines display the expected sensitivity from applying the BDT method, as shown in figure 15.