

Erratum: Dark photon from light scalar boson decays at FASER

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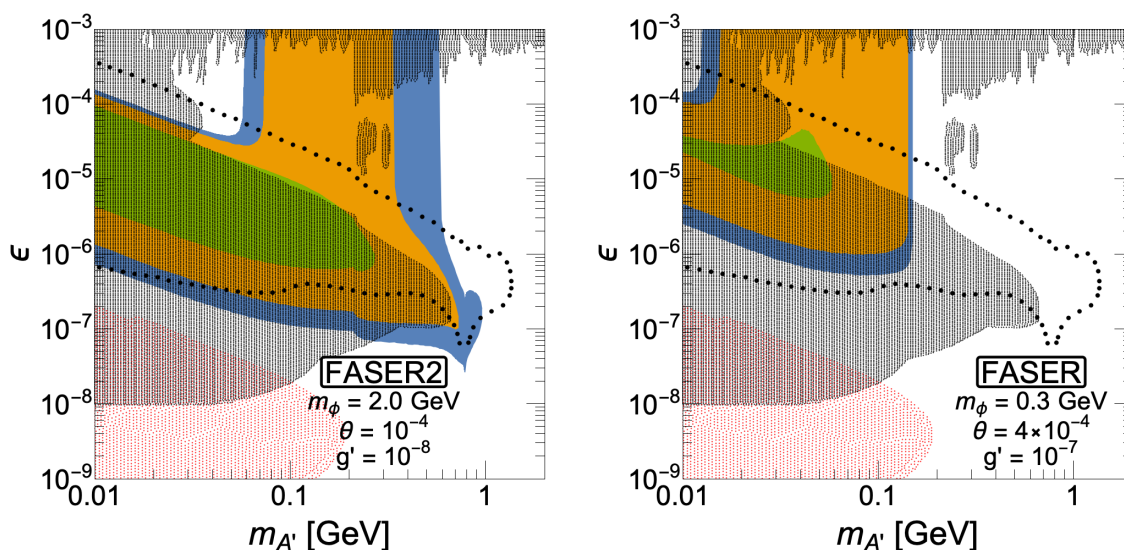


Figure 1. Expected number of the signal events of the dark photon after correcting the ϕ decay width.

We have found a mistake in calculations of the expected number of the signal events shown in figure 2, 4 and 5 of our paper. The decays of the scalar boson ϕ into hadrons were not appropriately included in its branching ratio in eq. (4.7). The correction affects the results only for the cases of small g' , namely the right panels in figures 2, 4 and 5. For the cases of FASER2, the number of the signal events is reduced by including the correction, in particular in the large $m_{A'}$ regions where the enhancement due to $m_{\phi} \gg m_{A'}$ in eq. (2.2) is weak. In contrast, for the case of FASER, we have found that the signal regions are shrunk by the correction even in small $m_{A'}$ regions. The results including the correction are shown in figure 1 in this erratum for figure 2 (left panel) and figure 4 (right panel) of the original paper, while the changes due to the correction are negligible for figure 5. The changes in other results with $g' \geq 10^{-6}$ are negligible because the decay width into dark photons is enough larger than that into hadrons.

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