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Corrigendum: 'Anomalous Kolar events revisited: Dark matter?'

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Abstract. Some unusual and unexplained events (the so-called Kolar events) were interpreted in *Pramana – J. Phys.* **82**, 609 (2014). This article is a corrigendum to it.

A couple of years ago a paper was published [1], interpreting some unusual and unexplained events (the so-called Kolar events) observed in the KGF underground laboratory. These events were observed in two phases over two decades starting from 1964.

In [1], these unusual Kolar events were explained as due to the possible decay of unstable dark matter, whose mass may be around 5–10 GeV, with a lifetime of around 10 billion years. This is about the same order of magnitude as the age of the Universe. This tantalizing explanation would have then solved two problems in one stroke, namely the explanation of the Kolar events as well as the observation of dark matter particles in laboratory conditions.

In the meantime, the authors have become aware of some limits on the lifetime of decaying dark matter due to the data from Fermi LAT observations of the extragalactic γ-ray background and Galactic halo. Based on the fact that no unambiguous signal has been found in γ-ray observations, an estimate of the lower bound on the lifetime has been made in the range of 2×10^{25} s or 6×10^{17} years for a mass range of 10–10000 GeV [2]. Fermi LAT observations on dwarf spheroidal galaxies give even tighter bounds [3]. These indirect astrophysical bounds appear much too high for the Kolar events to be interpreted as due to the decay of dark matter through conventional channels as shown in the above paper. Hence, the explanation is untenable at present unless a way out of this conundrum is found.

Acknowledgement

References

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