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3.55 KeV line in minimal decaying DM

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We discuss the possibility of reproducing the recently reported 3:55 KeV line in some simple decaying dark matter scenarios. The decaying Dark Matter is coupled to the Standard Model(SM) through a scalar field charged under the SM group which can pair produced at the LHC. The DM density is generated through freeze-in by the decay of the scalar field. The combined constraints from DM Inderect Detection and relic density allow to infer the detection prospects at the LHC of the scalar field.

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