

Regurgitated Dark Matter

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We present a new model for WIMP production based on the formation and subsequent evaporation of early Universe primordial black holes (PBHs) themselves formed from DM particles. We consider a first order phase transition that traps the initially thermal DM particles, resulting in the formation of Fermiball remnants that collapse to PBHs, which then emit the same types of DM particles. We show that the regurgitated DM scenario allows for DM to be fermions in the WIMP mass range $\sim 1 \text{ GeV} - 10^4 \text{ GeV}$ and beyond, thereby unlocking parameter space considered excluded.

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