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The Vev Flip-Flop: Dark Matter Decay between Weak Scale Phase Transitions

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We discuss a new alternative to the Weakly Interacting Massive Particle (WIMP) paradigm for dark matter. Rather than being determined by thermal freeze-out, the dark matter abundance in this scenario is set by dark matter decay, which is allowed for a limited amount of time just before the electroweak phase transition. We discuss a concrete model which exhibits a “vev flip-flop” and show that it is phenomenologically successful in the most interesting regions of its parameter space. We comment on detection prospects, primarily at the LHC.

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