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A clockwork WIMP

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I will discuss a thermal dark matter (DM) candidate within the clockwork framework. The clockwork mechanism, which is a natural way to generate small numbers starting from order-one couplings, allows to stabilize the DM particle over cosmological time by suppressing its decay into Standard Model particles. At the same time, pair annihilations are unsuppressed, so that the relic density is set by the usual freeze-out of the DM particle from the thermal bath, i.e. the clockwork DM candidate, although *unstable*, is a WIMP. The slow decay of the DM candidate is induced by “clockwork” particles that can be quite light and could be searched for at current or future colliders. I will also briefly comment on how this setup can minimally emerge from the deconstruction of an extra dimension in flat spacetime and argue that the clockwork mechanism that we consider could induce Majorana neutrino masses, with a seesaw scale of order TeV or less and Yukawa couplings of order unity.

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