

Resonant Self Interacting Dark Mesons from Hidden QCD

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We present models of resonant self-interacting dark matter in a dark sector with QCD, based on analogies to the meson spectra in Standard Model QCD. For dark mesons made of two light quarks, we present a simple model that realizes resonant self-interaction (analogous to the ϕ -K-K system) and thermal freeze-out. We also consider asymmetric dark matter composed of heavy and light dark quarks to realize a resonant self-interaction (analogous to the $Y(4S)$ -B-B system) and discuss the experimental probes of both setups. Finally, we comment on the possible resonant self-interactions already built into SIMP and ELDER mechanisms while making use of lattice results to determine feasibility.

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Yes

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