

Abstract Submitted  
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**Higgs portals to pulsar collapse** FATEMEH ELAHI, JOSEPH BRAMANTE, University of Notre Dame — Pulsars apparently missing from the galactic center could have been destroyed by asymmetric fermionic dark matter ( $m_X = 1 - 100$  GeV) coupled to a light scalar ( $m_\phi = 5 - 20$  MeV), which mixes with the Higgs boson. We point out that this pulsar-collapsing dark sector can resolve the core-cusp problem and will either be excluded or discovered by upcoming direct detection experiments. Another implication is a maximum pulsar age curve that increases with distance from the galactic center, with a normalization that depends on the couplings and masses of dark sector particles. Finally, we use old pulsars outside the galactic center to place bounds on asymmetric Higgs portal models.

Fatemeh Elahi  
University of Notre Dame

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