

Abstract Submitted  
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**Asymmetric dark stars and neutron star stability**<sup>1</sup> MOIRA GRESHAM, Whitman Coll — We describe gravitationally bound states of fermionic asymmetric dark matter (ADM stars), and the impact of ADM capture on the stability of neutron stars. We describe and motivate equations of state describing fermionic ADM with generic attractive and repulsive interactions, and the corresponding equilibrium sequences and maximum masses of fermionic ADM stars. Gravitational wave searches can utilize our solutions to model exotic compact objects (ECOs). Contrary to some previous claims in the literature, we also argue that fermionic ADM with an attractive interaction is no more effective in destabilizing neutron stars than fermionic ADM with no self-interactions.

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