

Abstract Submitted
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Improved treatment of neutron star cooling via modified Urca Process¹ ZIYUAN ZHANG, MARK ALFORD, Washington University in St. Louis
— Most neutron stars cool predominately via the modified Urca process, in which emitted neutrinos carry away energy. The traditional treatment for the in-medium nucleon propagator in the modified Urca process uses crude approximations. We reformulate the propagator by including the nucleon self-energy and examine the effect of this new propagator on the neutrino emissivity due to the modified Urca process.

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