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Publisher's Note: Kinetic energy sum spectra in nonmesonic weak decay of hypernuclei [Phys. Rev. C 78, 044312 (2008)] *(1 page)* . . . . . 059901(E)
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Publisher's Note: Semi-classical equation of state and specific-heat expressions with proton shell corrections for the inner crust of a neutron star [Phys. Rev. C 77, 065805 (2008)] *(1 page)* . . . . . 059902(E)
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