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(I) The impact of nuclear structure on constraints of neutron star structure

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Accreting neutron stars host a variety of astronomical observables which can be compared to model calculations to obtain dense matter constraints. However, key observables such as X-ray bursts and crust cooling are directly influenced by the structure of atomic nuclei involved in these processes. I will demonstrate the sensitivity of astrophysical models of accreting neutron star phenomena to changes in the input nuclear physics, highlight the subsequent influence on model-observation comparisons, and discuss related experimental work to reduce or remove the most influential uncertainties.

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