Abstract Submitted
for the CUWIP21 Meeting of
The American Physical Society

Bayesian inference of neutron star crust properties using neutron skin constraints[1] REBECCA PRESTON, DR. WILLIAM NEWTON, Texas AM UniversityCommerce — It is known that the thickness of neutron skins - the layer of excess neutrons at the surface of neutron rich isotopes - is correlated with certain neutron star properties. Using a Bayesian analysis of neutron skin measurements 208Pb, 48Ca and tin isotopes, we constrain values for the nuclear symmetry energy at nuclear saturation density. Using the posterior distribution of symmetry energy parameters we then model the neutron star crust and infer ranges for the location of the crust-core transition and the amount of nuclear pasta - non-spherical nuclear geometries - at the base of the crust.

Rebecca Preston
Texas A
M UniversityCommerce

Date submitted: 04 Jan 2021   Electronic form version 1.4