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EOS Constrains With Joint Observation of NICER PSR J0030+0451 and LIGO GW170817 TIANQI ZHAO, Stony Brook University — We perform joint analysis of NICER observation of PSR J0030+0451 and LIGO observation of GW170817. The constrains on equation of state(EOS) is calculated with different EOS parameterizations. We discover that natural prior with uniform EOS parameter generally have more weights on large neutron star radius. Thus, we suggest a prior with flat radius $R_{1.4}$, allowing consistent result from different EOS parameterizations. Instead of taking uniform mass prior while evaluate likelihood, we use maximal likelihood in mass for NICER and in mass ratio for LIGO in order to reduce bias of dM/dR.

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