

Abstract Submitted  
for the APR20 Meeting of  
The American Physical Society

**Projected Constraints on Einstein-dilaton-Gauss-Bonnet Gravity with NICER Observations**<sup>1</sup> HUNG TAN, HECTOR SILVA, NICOLAS YUNES, University of Illinois at Urbana-Champaign — Due to unprecedented resolution of the Neutron Star Interior Composition Explorer (NICER), we can detect X-rays emitted from hot spots on the surface of certain neutron stars, and extract vital information, helping us understand what happens to matter when nuclear saturation density is exceeded. Besides the interior of neutron stars, we can also use NICER data to constrain parameters of modified theories of gravity, and determine how close to Nature the predictions of GR are. In this talk, I will explain how we can use Bayesian techniques to strongly constrain Einstein-dilaton-Gauss-Bonnet gravity to a degree comparable to other gravitational wave constraints.

<sup>1</sup>We acknowledge financial support through NASA grant 80NSSC18K1352 and NSF grant PHY-1759615.

Hung Tan  
University of Illinois at Urbana-Champaign

Date submitted: 08 Jan 2020

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