

Abstract Submitted  
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**Gravitational Wave Tests of General Relativity with Future Detectors**<sup>1</sup> KATIE CHAMBERLAIN, Montana State Univ, NICOLAS YUNES, Montana State Univ, Physics, XGI — Gravitational Wave detections with aLIGO have given us unrivalled insight into the extreme gravity regime, in which the gravitational field is strong and dynamical, but where will these types of detections be in 20 years? In this talk, we will explore how the construction of future generations of gravitational wave detectors influences our ability to test General Relativity in extreme gravity. In particular, using the noise spectra for aLIGO, A+, Voyager, CE, and ET-B, as well as the eLISA configurations N2A1, N2A2, and N2A5, we will compare the constraints that eLISA will provide to those that future generations of aLIGO will provide. These studies should produce useful information about instrument design to help guide design of future detectors for tests of gravity.

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