Abstract Submitted
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Numerical relativity simulations of GW150914 beyond General Relativity[1] MARIA OKOUNKOVA, Flatiron Institute — We present the first astrophysically-relevant numerical binary black hole gravitational waveforms in higher-curvature theories of gravity beyond general relativity. We simulate a system with parameters consistent with GW150914, the first LIGO detection, in order-reduced dynamical Chern-Simons gravity, a theory with motivations in string theory and loop quantum gravity, and order-reduced Einstein dilaton Gauss-Bonnet gravity, a theory with motivations in string theory. We present results for the leading-order corrections to the merger and ringdown waveforms, and place estimates on detecting and constraining these beyond-GR effects with LIGO.

[1]Simons Foundation

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