

Abstract Submitted
for the APR16 Meeting of
The American Physical Society

**Kludge modified gravity inspiral-merger-ringdown waveforms:
Testing gravitational-wave tests of general relativity** NATHAN JOHNSON-
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WALTER DEL POZZO, University of Birmingham — We describe a variety of
self-consistent modifications of the effective-one-body framework that yield kludge
modified gravity inspiral-merger-ringdown (IMR) waveforms. These waveforms do
not correspond to any particular modified theory of gravity, but offer parametrized
deviations from general relativity in various regimes. They can thus be used to test
the performance of various gravitational wave tests of general relativity (GR). As an
example, we introduce the IMR consistency test, which tests for consistency between
the estimations of the final mass and spin from the inspiral and merger-ringdown
portions of a binary black hole waveform. We show that for reasonable source pa-
rameters and SNRs in Advanced LIGO, this test is able to detect a deviation from
GR with high confidence for certain modifications of the GR energy flux that are not
constrained by observations of the double pulsar. We also consider the performance
of a parameterized test of GR on these kludge modified gravity waveforms.

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Date submitted: 08 Jan 2016

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