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Towards a practical approach for testing General Relativity with gravitational wave detections LAURA SAMPSON, NEIL CORNISH, NICOLAS YUNES, Montana State University — The detection of gravitational waves in the advanced detector era will allow us to perform the first tests Einsteins's theory of gravity in the dynamical, strong-field regime. The parameterized post-Einsteinian waveform model provides a framework in which to develop powerful tests that can be applied to the signals from compact binary systems. We describe a practical implementation of such a testing scheme that optimally combines the information from multiple detections.

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