

Testing the Inspiral-Merger-Ringdown Test with Boson Stars

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As detections of gravitational waves are increasing, they offer a testing ground for General Relativity. One test for deviations from General Relativity and the Standard Model is the inspiral-merger-ringdown test. In this project, we investigate the applicability and reliability of this test based on simulated observations of injected boson star waveforms. We find that the test in its most common form is unreliable in this context, as it classifies injected binary boson stars as binary black holes. While adaptations of the test can increase the reliability to some extent, it also depends on the form of the injected waveform used for the simulated observation.

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