

Theoretical Physics Seminar

Monday, November 4, 2019 / Pupin Hall Theory Center, 8th Floor / 2:10 PM

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"Theory-agnostic Tests of Gravity with Gravitational Waves"



Compact binary merger events recently discovered by the LIGO and Virgo Collaborations offer us excellent testbeds for probing fundamental physics. In this talk, I first briefly review the tests of General Relativity performed by the LIGO/Virgo Collaborations using the observed gravitational wave events. I will then focus on two theory agnostic tests, namely (i) parameterized tests and (ii) inspiral-merger-ringdown consistency tests. For each case, I describe the current status and explain how such tests will improve in the future. I will also present how such model-independent tests can be applied to specific modified theories of gravity, such as those inspired by string theory.