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Smoking guns of beyong-GR physics in binary mergers

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Gravitational waves are among the ultimate tools to test fundamental
physics. The degeneracies between different effects are a serious obstacle, though, to fulfilling this goal since modified gravity often leads to smaller cumulative changes. In the present talk we will focus on some interesting new effects we can observe in the gravitational wave spectrum that differ qualitatively from the standard picture in general relativity. This includes jumps in the gravitational wave emission from merging black holes and inverse chirp signal of extreme mass-ratio inspirals. Such effects are valuable because they are a smoking gun of beyond-GR physics that can be easily traced in observations.

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