

Abstract Submitted
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Constraints on GW waveforms¹ TOMMASO DE LORENZO, ABHAY ASHTEKAR, NEEV KHERA, Pennsylvania State University — Gravitational waveforms for compact binary coalescences (CBCs) have been invaluable for detections by the LIGO-Virgo collaboration. They are produced by powerful combinations of analytical approximations and numerical simulations. So far systematic errors arising from these approximations have been less than statistical errors. However, we are now entering an era of abundant detections, and the third generation observatories, as well as LISA, are on the horizon. Therefore, it is highly desirable to have more accurate waveforms. The goal of this talk is to show that full non-linear general relativity (GR) imposes an infinite number of sharp constraints on the CBC waveforms. These can be used as additional measures both to evaluate the accuracy of candidate waveforms against exact GR, and to discriminate between various avenues currently used to generate waveforms.

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