

Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Can LIGO measure the spins of nearly extremal, merging binary black holes? GEOFFREY LOVELACE, Cal State Univ-Fullerton, KATERINA CHATZIOANNOU, Canadian Institute for Theoretical Astrophysics — Astrophysical evidence suggests that black holes that are nearly extremal (i.e., near the theoretical upper limit) might exist and thus might be among the merging black holes that LIGO observes. If LIGO were to observe gravitational waves from nearly extremal, merging black holes, would parameter estimation recover the rapid spins? In this talk, we test typical LIGO parameter estimation methods on injections of gravitational waveforms from numerical-relativity simulations of nearly-extremal, merging black holes with spins parallel or antiparallel with the orbital angular momentum. We find that recovering the holes' nearly extremal spins is challenging and that a commonly used prior (uniform in spin magnitude and direction) disfavors rapid black-hole spins.

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Date submitted: 11 Jan 2018

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