

Abstract Submitted
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Precision Standard Siren Cosmology HSIN-YU CHEN, Harvard Univ, MAYA FISHBACH, DANIEL HOLZ, Univ. of Chicago — We discuss the constraints on the Hubble constant to be expected from standard siren sources in ground-based gravitational wave detectors. We consider binary neutron star and binary black hole sources, and focus on the role of golden sirens (the loudest and best constrained sources) to constrain cosmological parameters. We consider two approaches: the counterpart case, where electromagnetic observations provide an independent measurement of the redshift to the sources, and the statistical case, incorporating an analysis over all potential host galaxies within the localization volumes. Our analysis includes realistic measurement uncertainties and selection biases. With $\sim 10/60/200$ binary neutron star standard sirens with electromagnetic counterparts, H_0 would be constrained to $4/2/1\%$. Although the rates, and thus precise timetable, remain uncertain, precision standard siren cosmology can be expected in the foreseeable future.

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