

Abstract Submitted
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Parameter Estimation of Eccentric Systems EAMONN O'SHEA, PRAYUSH KUMAR, Cornell University — Current LIGO/Virgo search and parameter estimation pipelines have yet to identify a candidate binary black hole coalescence with appreciable eccentricity. However, simulations of dense stellar environments suggest that 10% of binary black holes will enter the LIGO/Virgo band which eccentricity greater than 0.1. Given that, going forward, we should expect LIGO/Virgo - and future detectors - to begin detecting gravitational wave signals from eccentric binaries, it is important to identify the challenges these systems may pose for existing parameter estimation pipelines. To this end, we perform an injection study of eccentric binary black hole mergers to identify how well existing pipelines and waveform models can recover the source parameters. In particular, we identify a systematic bias in the estimation of the masses of the binary black holes when the system has moderate eccentricity.

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