

Abstract Submitted
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Rapid Bayesian Triangulation of Gravitational Wave Inspirals for Advanced LIGO LEO SINGER, LARRY PRICE, LIGO Laboratory, California Institute of Technology — Potential electromagnetic counterparts of compact binary mergers detectable by ground-based gravitational wave detectors fade rapidly. In the last joint LIGO–Virgo science run, a coincidence-based triangulation code produced sky maps for rapid telescope pointing. We are improving upon it with a more accurate Bayesian sky localization algorithm that takes as input the matched-filter amplitude and time-of-arrival. We review the parameter estimation accuracy of matched filters, comparing the often-used Cramér-Rao bound with the tighter, but less well known, Barankin bound. We then describe our new sky localization algorithm and its performance.

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