

Abstract Submitted
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Coherent compact binary coalescence searches for external triggers with large sky-position errors SHAON GHOSH, Graduate Student, SUKANTA BOSE, Associate Professor — Short hard gamma-ray bursts (SGRBs) are conjectured to have compact binary coalescences (CBCs) as progenitors. Therefore, SGRBs provide external triggers for searching signals from CBCs in gravitational-wave (GW) detectors. Whereas for many SGRBs the sky-position is determined by the electromagnetic detections with high accuracy, for some others it can be off by several degrees. Here we develop a method for coherently searching a patch of the sky, several degrees wide, for CBC signals in multiple baselines of GW detectors. We compare its performance in Gaussian noise with that of an all-sky (or “blind”) search and a targeted search and show where it can perform better than the latter two.

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