

Abstract Submitted
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Towards an Extended Binary Black Hole Search using Advanced LIGO: from Stellar to Intermediate-Mass¹ DEBNANDINI MUKHERJEE, Univ of Wisconsin, Milwaukee, THE LIGO SCIENTIFIC COLLABORATION AND THE VIRGO COLLABORATION COLLABORATION — Intermediate mass black hole (IMBH) binaries, make up the mass space between stellar-mass and super massive black holes, with their total mass in the range of about 100 to 100,000 solar masses. Detection of IMBH mergers would help us explore their formation channels. The IMBH search is currently sensitive to coalescences of black hole binaries covering a total mass range between 50-600 solar masses. Recent publications in astrophysics point to the physical importance of the IMBH search (they may shed light on certain supernova mechanisms). In light of the conclusion of the 1st Advanced LIGO search conducted between September 2015 and January 2016 (O1 run), I will provide an update on the IMBH search (software GstLAL based, using matched-filter) on this data and will discuss the feasibility of including the IMBH search with the stellar-mass black hole search space (total mass range 2-100 solar masses), thus achieving a combined search for future runs.

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