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A Template-based Search for Intermediate Mass Black Hole Binaries: Advanced LIGO-Virgo in its 3rd Observing Run[1] DEBNANDINI MUKHERJEE, Pennsylvania State University, ADVANCED LIGO-VIRGO COLLABORATION — The intermediate mass black holes have masses in the range of 100 to 100,000 solar masses and make up the mass space between the stellar mass and the supermassive black holes. The Advanced LIGO-Virgo detectors are more sensitive than before to gravitational waves from compact binary coalescences in its 3rd and present observing run. The rates of observation of gravitational wave sources with at least one intermediate mass black hole component, to which the detectors are currently sensitive, would help constrain their formation channel, which so far remains uncertain. Their observations could also point to a missing link between stellar mass and super massive black holes. In my talk I will discuss the search for these sources using pre-computed waveform templates by employing a matched-filter based search technique and will provide an update in light of the ongoing observing run.

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