

Title:

ALL-SKY SEARCH FOR CONTINUOUS GRAVITATIONAL WAVES FROM BOSON CLOUDS AROUND STELLAR MASS BLACK HOLES

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Abstract:

It has been recently theorized [1-4] that ultra-light boson clouds can spontaneously form around spinning black holes and become sources of long-lived periodic gravitational waves, potentially detectable by current interferometric detectors such as LIGO and Virgo. Here we describe the analysis setup for an all-sky search for such signals [5] and report preliminary results from the analysis of LIGO O2 data. We also discuss implications for the allowable boson masses consistent with the lack of detections in previous standard searches for periodic gravitational signals.

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