

A resampling search method for light primordial black hole binary inspirals

Sub-solar mass binary inspirals, e.g. from primordial black holes with masses of the order of $\mathcal{O}(10^{-5})M_{\odot}$ – $\mathcal{O}(10^{-3})M_{\odot}$, generate long transient signals that last of the orders of hours - years. A detection of such a signal would have profound implications on the understanding of cosmology, dark matter, and physics of the very early universe. We present an implementation of a resampling algorithm to search for such signals in gravitational wave data. An estimate for the distance sensitivity of the technique suggests that the Galactic Centre can be probed for large portions of the parameter space studied. We also present preliminary results about efficiently construct a search grid and the expected computational cost of a directed search towards the Galactic Centre.

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Session Classification: PhD student session