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A resampling search method for sub-solar mass binary inspirals

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Primordial black holes are proposed to have formed in the very early universe and a first detection of them would provide valuable insights into cosmology, dark matter, and physics of the very early universe. Primordial black holes could form binaries systems with chirp masses of the order of $\mathcal{O}(10^{-5})M_{\odot} - \mathcal{O}(10^{-3})M_{\odot}$, which would emit long transient gravitational waves signals that last of the orders of hours - years. 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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