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Pulsar timing can constrain primordial black hole dark matter in the LIGO mass window KATELIN SCHUTZ, UC Berkeley — The recent discovery of gravitational waves from co-orbiting black holes has rekindled an interest in primordial black holes (PBHs) as a possible component of the dark matter (DM). In this paper, we show that existing proposals for probing DM substructure can also constrain the abundance of primordial black holes in the local Galactic halo. Specifically, pulsar timing arrays may already have sufficient data to constrain 1-1000 M_{\odot} PBHs via the non-detection of their Shapiro time delay as the black holes move around the Galactic halo. We present the results of a simulation which suggests that existing data may already be capable of constraining the PBH density more stringently than other recently proposed methods for doing so.

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