

The recent gravitational wave observation by pulsar timing arrays and primordial black holes

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The recent data releases by multiple pulsar timing array (PTA) experiments show evidence for Hellings-Downs angular correlations indicating that the observed stochastic common spectrum can be interpreted as a stochastic gravitational wave background. We study whether the signal may originate from gravitational waves induced by high-amplitude primordial curvature perturbations. Such large perturbations may be accompanied by the generation of a sizeable primordial black hole (PBH) abundance. We discuss in which scenarios the inclusion of non-Gaussianities in the computation of the abundance can lead to a signal compatible with the PTA experiments without overproducing PBHs.

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