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Dark energy, D-branes, and Pulsar Timing Arrays

Recently, several pulsar timing array collaborations announced the first detection of a Stochastic Gravitational Wave Background (SGWB). In this talk, I shall discuss a post-inflationary mechanism, driven by an early scalar-tensor dominated epoch, which is capable of enhancing the size of inflationary tensor fluctuations at frequencies detectable by pulsar timing arrays. The resultant gravitational wave signal has a broken power-law profile, and constitutes a possible contribution towards the explanation of the recent detection of the SGWB. Moreover, the model allows us to obtain a realization of an Early Dark Energy (EDE) phase, followed by a Late Dark Energy (LDE) era. While EDE has drawn attention as a possible means to address the Hubble tension, the LDE epoch can explain the current acceleration of the universe without requiring a cosmological constant.

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