

Whispers from the Dark Universe - Particles & Fields in the Gravitational Wave Era

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WHISPERS FROM THE DARK UNIVERSE – PARTICLES & FIELDS IN THE GRAVITATIONAL WAVE ERA

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New early dark energy and its equation of state

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The Hubble Tension is the discrepancy between the measured value of the Hubble parameter H_0 and its Λ CDM model prediction using the Planck CMB data. New Early Dark Energy (NEDE) addresses this tension using a triggered phase transition in the dark sector. In this work we constrain the phenomenological fluid model properties of NEDE using recent datasets. We allow the equation of state parameter, characterizing the post-phase transition fluid, to evolve in time. Our results indicate that data is compatible with a simple time dependence that could arise from a mixture of radiation and a stiff fluid. The model shows a significant reduction of the tension down to approximately 3.

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