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String Theory (and Gravitational Waves) from the First Half of the Universe

Thursday 13 June 2024 16:05 (20 minutes)

I will discuss stringy, moduli-driven cosmologies between the end of inflation and the commencement of the Hot Big Bang,a period that can cover half the lifetime of the universe on a logarithmic scale. Compared to the standard cosmology, stringy cosmologies motivate extended kination, tracker and moduli-dominated epochs involving significantly trans-Planckian field excursions. The transPlanckian field evolution may result in radical changes to Standard Model couplings during this history, such as a time-dependent string scale. We will highlight how this can naturally explain a population of cosmic superstrings compatible with existing bounds, and provide predictions for their gravitational wave signatures.

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