

Measuring the string scale with gravitational waves

Thursday, 27 June 2024 15:45 (15 minutes)

Using flat space string amplitudes and recently computed equilibration rates for a gas of highly excited strings, we argue that a Hagedorn phase could have occurred in the early Universe with a bath of open strings dominating the energy density. These strings would predominantly decay in Standard Model fields, providing a successful reheating, and would release a gravitational wave spectrum whose amplitude peaks at a frequency similar to the Cosmic Gravitational Wave Background predicted by the Standard Model, but with a generically larger amplitude, which depends linearly with the local string scale.

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Session Classification: Parallel session