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O(D,D) string cosmology from double field theory

Thursday, 10 July 2025 11:50 (20 minutes)

The low-energy limit of string theory contains additional gravitational degrees of freedom that are not present in general relativity. Together with the metric, these fields are naturally embedded in the O(D,D)-symmetric framework of double field theory (DFT). First I will explain how the O(D,D) symmetry uniquely prescribes the interactions between the extended gravitational sector and other matter, leading to novel features beyond conventional string cosmology. Then I will show how the generalized conservation laws modify the conditions for conservation of curvature perturbations. Finally, I will present some examples of analytic solutions, including candidate models for bouncing cosmologies.

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