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Perturbations in O(D,D) string cosmology

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Tensions in cosmology may be addressed by modifying our theory of gravity. String theory at low energies contains additional fields that are not present in general relativity but are naturally embedded in the O(D,D)-symmetric framework of double field theory (DFT). Moreover, the O(D,D) symmetry uniquely prescribes the interactions between the extended gravitational sector and other matter, leading to implications for string cosmology. After reviewing the basics of DFT, I will discuss some features of cosmological perturbations in this framework, including the evolution and mixing of fluctuations due to H-flux, conditions for conservation of curvature perturbations, as well as some implications for bouncing cosmologies.

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