

Alleviating the σ_8 tension via Soft Cosmology and Modified Gravity

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We examine the possibility of “soft cosmology”, namely small deviations from the usual cosmological framework due to the effective appearance of soft-matter properties in the Universe sectors. One effect of such a case would be that dark energy and/or dark matter exhibit a different equation-of-state parameter at large scales (which determine the universe expansion) and at intermediate scales (which determine the sub-horizon clustering and the large-scale structure formation). These properties could help alleviate issues of the standard cosmological paradigm, such as the σ_8 tension. In this talk, we shall demonstrate how an $f(R)$ modified theory of gravity could naturally facilitate such properties for the dark Universe sectors.

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