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Quantifying the S_8 tension with the Redshift Space Distortion data set

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One problem of the Λ CDM model is the tension between the S_8 found in Cosmic Microwave Background (CMB) experiments and the smaller one obtained from large-scale observations in the late Universe. The σ_8 quantifies the relatively high level of clustering. Bayesian Analysis of the Redshift Space Distortion (RSD) selected data set yields: $S_8 = 0.700 \pm 0.038$. The fit has 3σ tension with the Planck 2018 results. With Gaussian processes method a model-independent reconstructions of the growth history of matter in-homogeneity is studied. The fit yields $S_8 = 0.707 \pm 0.085$. -0.085 , 0.701 ± 0.089 , -0.089 , and 0.731 ± 0.063 -0.062 for different kernels. The tension reduces and being smaller than 1.5σ . With future measurements the tension may be reduced, but the possibility the tension is real is a plausible situation.

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Session Classification: Status of the H_0 and Σ_8 Tensions: Theoretical Models and Model-Independent Constraints

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