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Quantifying the S8 tension with the Redshift Space Distortion data set

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One problem of the ΛCDM model is the tension between the S8 found in Cosmic Microwave Background (CMB) experiments and the smaller one obtained from large-scale observations in the late Universe. The σ8 quantifies the relatively high level of clustering. Bayesian Analysis of the Redshift Space Distortion (RSD) selected data set yields: S8 = 0.700+0.038 −0.037. 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 S8 = 0.707+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 then 1.5 σ. 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 Sigma_8 Tensions: Theoretical Models and Model-Independent Constraints

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