

Cosmological tensions: hints for a new concordance model?

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The Cosmic Microwave Background temperature and polarization anisotropy measurements have provided strong confirmation of the Λ CDM model of structure formation. Even if this model can explain incredibly well the observations in a vast range of scales and epochs, with the increase of the experimental sensitivity, a few interesting tensions between the cosmological probes, and anomalies in the CMB data, have emerged with different statistical significance. While some portion of these discrepancies may be due to systematic errors, their persistence across probes strongly hints at cracks in the standard Λ CDM cosmological scenario. The most statistically significant are the Hubble constant puzzle, the S_8 parameter tensions, the Alens anomaly and a curvature of the Universe. I will review these tensions, showing some interesting extended cosmological scenarios that can alleviate them.

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