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The role of CMB spectral distortions in the Hubble tension

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Although both early and late-time modifications of the ΛCDM model have been proposed to address the Hubble tension, compelling arguments suggest that for a solution to be successful it needs to modify the expansion history of the universe prior to recombination. This greatly increases the importance of precise CMB observations, and in this talk I will make the argument for CMB spectral distortions (SDs), highlighting their potential role in constraining models (like e.g. Early Dark Energy) that introduce significant shifts in the standard ΛCDM parameters, such as the scalar spectral index, in attempt to solve the Hubble tension. Furthermore, in addition to the physical interpretation of the results I will also briefly present the novel numerical implementation of SDs in the cosmological codes CLASS and MontePython that was employed to investigate the aforementioned scenario.

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