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Dark Acoustic Oscillation Faces the Cosmological Tensions

Tuesday 14 May 2024 16:30 (15 minutes)

With the growing precision of cosmological measurements, tensions in the determination of cosmological parameters have arisen that might be the first manifestations of physics going beyond ΛCDM. We propose a new class of interacting dark sector models, which lead to qualitatively distinct cosmological behavior, dark acoustic oscillation, which can potentially simultaneously address the two most important tensions in cosmological data, the H0 and S8 tensions. The main ingredients in this class of models are self-interacting dark radiation and its dark acoustic oscillation induced by strong interactions with a fraction of dark matter. I will also present the latest results from applying this model across various combinations of cosmological data, illustrating the improvement it provides over ΛCDM.

Mini Symposia (Invited Talks Only)

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