



Contribution ID: 122

Type: **not specified**

## Simultaneous alleviation of major cosmological tensions through $\Lambda_s$ CDM cosmology

*Thursday 31 August 2023 18:15 (25 minutes)*

In this talk, we will first give a brief introduction to the  $\Lambda_s$ CDM model, which explores the recent conjecture suggesting a rapid transition of the universe from anti-de Sitter vacua to de Sitter vacua, viz., the cosmological constant switches sign from negative to positive at redshift  $z_{\dagger} \sim 1.7$ , inspired by the graduated dark energy (gDE). And then, we will present the results of its comprehensive observational analysis showing that, predicting  $z_{\dagger} \approx 1.7$ ,  $\Lambda_s$ CDM simultaneously addresses the major cosmological tensions of the standard  $\Lambda$ CDM model, viz., the  $H_0$ ,  $M_B$ , and  $S_8$  tensions, along with some other less significant tensions such as the BAO Ly- $\alpha$  discrepancy. We will conclude with a theoretical discussion on the possible physical mechanisms from which this scenario may be realized and their implications for our current understanding of the universe.

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**Session Classification:** Parallel