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## Spherical Collapse and Sudden Singularities: Insights from the $\Lambda_s \text{CDM}$ Model

The  $\Lambda_s$ CDM model, which posits a rapid transition from anti-de Sitter (AdS) to de Sitter (dS) vacua around redshift  $z_{\dagger} \approx 2$ , aims to resolve cosmological tensions, including those related to  $H_0$  and  $S_8$ . This study examines the impact of a type II singularity at  $z = z_{\dagger}$  on the evolution of cosmic structures, specifically the generalization of the spherical collapse model to incorporate the sudden singularity. We analyze the matter overdensity, indicating deviations of the  $\Lambda_s$ CDM model from the Planck- $\Lambda$ CDM expectations. The observable effects of sudden singularities on virialized overdensities will be discussed.

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