Contribution ID: **80** Type: **not specified**

Is dark energy dependent on cosmological curvature?

Tuesday 8 July 2025 16:20 (20 minutes)

Within present observational uncertainties, the time evolution of dark energy discovered by DESI (2025) is consistent with a simple model in which the dark energy density maintains a direct dependence on the $| \Omega - 1 |$ measure of spatial curvature. This, together with Bousso's (2002) conjecture that the holographic bound of the universe saturates at the observer's apparent horizon, and Gibbons & Hawking's (1977) postulate that the cosmological event horizon in de Sitter space is fully physically equivalent to an inverted event horizon of a Schwarzschild black hole of identical surface area, predicts with surprising accuracy both the strength and change in dark energy. A notable feature of this model is that ρ_{DE} remains small as long as space remains nearly flat, and ρ_{DE} acts to re-flatten space if Ω ever deviates significantly from unity.

Author: BRYJA, Claia (City College of San Francisco)

Presenter: BRYJA, Claia (City College of San Francisco)

Session Classification: Parallel 1