Contribution ID: **580**   Type: **Talk in the parallel session**

The Tale of H0 Crisis and the Gravitational Transition

Thursday, 8 July 2021 18:11 (19 minutes)

We propose a late time gravitational transition at low redshifts $z_t < 0.1$ as a possible solution of both the Hubble and growth tensions. Such a transition would naturally lead to a transition of the intrinsic SnIa luminosity and absolute magnitude M at z_t and could also be accompanied by a transition in the dark energy equation of state parameter w. Thus we would have a late $w - M$ phantom transition ($LwMPT$). Such a model does not belong to the category of dark energy models with late time smooth deformations of the Hubble expansion rate $H(z)$, that as we have shown fail to address the growth tension. Therefore, the $LwMPT$ model has the potential of resolving the growth tension by reducing the growth of density perturbations without affecting the Planck/ΛCDM background expansion. Finally, we offer observational hints for a gravitational transition that would support the $LwMPT$ hypothesis via the study of the evolution of the baryonic Tully-Fisher relation. Specifically, we use a recently published data compilation, finding hints at $\approx 3\sigma$ level for a transition at critical distances $D_c \simeq 9Mpc$ and $D_c \simeq 17Mpc$.

Primary author: ALESTAS, George (University of Ioannina)

Presenter: ALESTAS, George (University of Ioannina)

Session Classification: Status of the H_0 and Sigma_8 Tensions: Theoretical Models and Model-Independent Constraints

Track Classification: Cosmic Microwave Background: Status of the H_0 and sigma_8 tensions: theoretical models and model-independent constraints