Contribution ID: **49**   Type: **not specified**

The Hubble parameter of the Local Distance Ladder from dynamical dark energy with no free parameters

Tuesday 12 September 2023 09:00 (1 hour)

The H_0-tension problem challenges our conventional application of general relativity to cosmology, otherwise well-described by FRLW universes in terms a Hubble parameter $H(z)$ and a deceleration parameter $q(z)$. A finite dark energy density is expected from the Sitter temperature associated with the de Sitter background scale of acceleration $a_{dS} = cH$, where c is the velocity of light. Normalizing the propagator by the total phase of the Hubble horizon, this predicts a dynamical dark energy $\Lambda = g(1 - q)H^2$, where $g = 1 - \xi\alpha < 1$ refers to a gravitational coupling constant modified on the order of the fine-structure constant α. Preserving the astronomical age of the Universe and the BAO, we infer $\xi = 0.49 \pm 0.1$. Specifically, $\xi = 1/2$ predicts $H_0 = (73.37 \pm 0.54)$km/s/Mpc (van Putten, 2021, PLB, 823, 136737) consistent with $H_0 = (73.30 \pm 1.04)$km/s/Mpc of the Local Distance Ladder (Riess et al. 2022, ApJ, 934, L7).

Presenter: Prof. VAN PUTTEN, Maurice (Sejong U. Korea)