

A uniform Zwicky Transient Facility-tip of the red giant branch distance ladder Implications for the Hubble constant

Thursday 8 September 2022 11:50 (20 minutes)

The Hubble tension is arguably the largest open question in modern cosmology. It could be a sign of new cosmological physics or unknown sources of systematics. To definitively answer this question, we need percent level measurements of the local distance scale. In this talk, I will present our recent work on calibrating the absolute luminosity of Type Ia supernovae from the wide-field Zwicky Transient Facility. This distance ladder is uniform in that both the calibrator and Hubble flow SNe Ia are observed with a single, untargeted survey, which sidesteps the two largest systematics in the local distance ladder, i.e. photometric cross-calibration and selection biases depending on host environment. Finally, I'll preview the upcoming work on building this distance ladder in the JWST era.

Presenter: Dr DHAWAN, Suhail (University of Cambridge)