Contribution ID: **269** Type: **Talk in the parallel session**

Closing the cosmological loop with the redshift drift

Thursday, 8 July 2021 19:00 (20 minutes)

The redshift drift (also known as the Sandage Test) is a model-independent probe of fundamental cosmology, enabling us to watch the universe expand in real time, and thereby to confirm (or not) the recent acceleration of the universe without any model-dependent assumptions. On the other hand, by choosing a fiducial model one can also use it to constrain the model parameters, thereby providing a consistency test for results obtained with other probes. The drift can be measured by the Extremely Large Telescope (Liske et al. 2008) and also by the full SKA (Klockner et al. 2015). Recently two alternative measurement methods have been proposed: the cosmic accelerometer (Eikenberry et al. 2020), and the differential redshift drift (Cooke 2020). Here we present a comparative analysis of the various methods and their possible outcomes. We find that no single method is uniformly better than the others. Instead, their comparative performance depends both on experimental parameters (including the experiment time and redshift at which the measurement is made) and also on the scientific goal (e.g., detecting the drift signal with high statistical significance, constraining the matter density, or constraining the dark energy properties). In other words, the experiment should be optimized for the preferred scientific goal.

Primary author: MARTINS, Carlos (CAUP)

Presenter: MARTINS, Carlos (CAUP)

Session Classification: Non Standard Cosmological Probes

Track Classification: Fast Transients: Non Standard Cosmological Probes