

Cosmology and Fundamental Physics from DESI-2 and Spec-S5

Tuesday, June 11, 2024 5:10 PM (40 minutes)

Advances in experimental techniques make it possible to map the high redshift Universe in three dimensions at high fidelity in the near future. This will increase the observed volume by many-fold, while providing unprecedented access to very large scales, which hold key information about early-Universe physics. In addition, such measurements can directly probe the Dark Energy density throughout cosmic history. The precision of these measurements, combined with CMB observations, also has the promise of greatly improving our constraints on the physics of the dark sector, the masses of neutrinos, the amount of spatial curvature, and potential modifications to General Relativity. In this talk, I will explain how DESI-2 and Spec-S5 will address these fundamental questions and open up a new window on the Universe, greatly enhancing the potential for new discoveries. Finally, I will highlight synergies between spectroscopic surveys and CMB experiments and talk about recent progress in combining DESI data with ACT and Planck.

Primary author: FERRARO, Simone (Lawrence Berkeley National Laboratory)

Presenter: FERRARO, Simone (Lawrence Berkeley National Laboratory)

Session Classification: Possibilities in synergies, present and future