

## Synergies with CMB

*Tuesday, 7 May 2024 08:45 (15 minutes)*

Scientific programs involving joint-analyses of galaxy surveys and CMB are increasingly gaining attention as they often increase the prospects to detect and characterize new signals by reducing systematics, cancelling cosmic variance and breaking degeneracies. The reconstruction of large-scale cosmological fluctuations at different epochs by using the CMB as a back-light will allow galaxy surveys to provide the most precise tests of fundamental physics, and has the potential to open new and unique windows into unexplored epochs of structure formation. Joint analysis of future Stage-5 Spectroscopic surveys with CMB will boost the Figure of Merit (FoM) of these surveys when constraining dynamics and interactions in the early Universe or fundamental principles that govern the major cosmological transitions such as helium reionization, for example, over two orders of magnitudes compared to considering galaxy surveys in isolation. In this talk, I will demonstrate the prospects of joint analyses of CMB and S5 spectroscopic galaxy surveys for inferring fundamental properties of our Universe.

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**Session Classification:** Session 5