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Future measurements of S8 with tomographic cross-correlations between LSST and CMB experiments

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The well established ΛCDM model of cosmology suffers from several challenges and disparities like the nature of dark matter and dark energy, accelerated expansion of the Universe and tensions in cosmological parameters derived from different observations. Tomographic cross-correlation measurements from the next-generation CMB experiments and galaxy surveys will allow us to robustly quantify deviations from the ΛCDM model. However, with increasing quantity and quality of observational data, it is crucial to mitigate the systematic errors that may bias these cross-correlation measurements. In this talk, we will present forecasts on the S8 parameter from tomographic cross-correlations between the Vera C. Rubin LSST photometric galaxy survey and CMB experiments (Simons Observatory and *Planck*). We will discuss the importance and mitigation strategies for redshift bin mismatch of galaxies due to photometric redshift uncertainties. Although this talk will be based on LSST simulations, the results and discussions should be applicable to photometric galaxy surveys and their cross-correlations measurements in general.

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