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Tomographic Mapping of Cosmic Structure Growth with HIRAX and Rubin-LSST

This project focuses on how well the Hydrogen Intensity and Real Time Analysis Experiment (HIRAX) and Rubin Legacy Survey of Space and Time (LSST) will do in constraining cosmological parameters relating to the large-scale structure (LSS) of the universe. Neutral hydrogen (HI) and weak gravitational lensing are used as tracers in this work. The parameters constrained in this project are the growth rate, $f\sigma_8$, and HI bias, $b\sigma_8$, using the Fisher matrix formalism. Furthermore, these parameters are estimated across a range of redshift bins to illustrate and understand the evolution of the LSS of the universe.

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