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Exploiting Cross Correlation Opportunities in DESI[1] ALEXIE LEAUTHAUD, University of California, Santa Cruz, SIMONE FERRARO, Lawrence Berkeley National Lab, DESI COLLABORATION — The DESI (Dark Energy Spectroscopic Instrument) will obtain spectroscopic redshifts for tens of millions of galaxies and quasars over 14,000 deg2. The DESI footprint will also overlap with a number of other large area data-sets (imaging, CMB, 21cm, X-rays, etc). I will present the new scientific opportunities that will be afforded by the overlap between DESI and these other data sets. Cross-correlations between DESI and lensing surveys (HSC, KiDS, DES) will provide a powerful test of General Relativity. The overlap between DESI, CMB, and X-ray data provides opportunities to better understand the properties of the gaseous component of dark matter halos as well as to measure the growth history via the dark matter mass function. Cross-correlations between DESI and 21cm surveys may yield new and orthogonal constraints on the expansion history via BAO.

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