Foreground Removal Methods for Cosmology Large-Angular Scale Surveyor[1] MAXIMILIAN ABITBOL, TOBIAS MARRIAGE, Johns Hopkins University — The Cosmology Large-Angular Scale Surveyor (CLASS) is a new cosmic microwave background (CMB) polarization survey instrument deploying to the Atacama Desert. CLASS will survey over half of the sky to measure the B-mode polarization on >2 degree angular scales at 40, 90, and 150 GHz using transition-edge sensor bolometers. In order to estimate cosmological parameters such as the optical depth to reionization, τ, and the tensor-to-scalar ratio, r, we need to remove the significant foreground emission from thermal dust and synchrotron sources from the signal. In this poster we consider template based polarized foreground removal techniques. For CLASS, the 40 and 150 GHz channels will serve to distinguish the spectrally distinct synchrotron and dust emission from the polarized CMB signal. We reproduce both the temperature and polarization template cleaning procedures used by the Wilkinson Microwave Anisotropy Probe (WMAP) team and consider additional template cleaning methods. We apply these statistical foreground removal methods to simulated CLASS CMB polarization maps and extract the B-mode polarization from these cleaned maps.

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