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## **Fundamental Physics from SZ Cluster Surveys with CMB and Optical Lensing Mass Calibration**

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Future high resolution CMB experiments will detect tens of thousands of galaxy clusters. The abundance of clusters as a function of mass and redshift allows us to map the growth of structure and consequently measure the sum of neutrino masses and constrain the nature of dark energy. Such measurements are currently limited by our ability to calibrate the masses of galaxy clusters. Planned CMB experiments will be sensitive enough to offer competent mass calibration from CMB lensing that is complementary to optical weak lensing of galaxies. I will review and compare the prospects of CMB and optical mass calibration, discussing this in the context of methods applied to ongoing CMB experiments like Advanced ACT, and focusing on systematics such as contamination from astrophysical foregrounds.

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