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Cosmological Tests of General Relativity with tomographic surveys ALESSANDRA SILVESTRI, MIT, Kavli Institute for Astrophysics and Space Research, GONGBO ZHAO, ICG Portsmouth, UK, LEVON POGOSIAN, Simon Fraser University, Canada, JOEL ZYLBERBERG, University of California, Berkeley
— Future cosmological surveys, combining galaxy counts and weak lensing measurements, will map the evolution of matter perturbations and gravitational potentials from the matter dominated epoch until today. In addition to tightening the constraints on allowed expansion histories, the combination of these measurements will test the relationships between matter overdensities, local curvature, and the Newtonian potential. These relation- ships can be modi?ed in alternative theories of gravity and by exotic forms of Dark Energy. I will present a study of the potential of upcoming and future tomographic surveys, such as DES and LSST, with the aid of CMB and supernovae data, to detect departures from the growth of perturbations expected within General Relativity with a cosmological constant.

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