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Lensing convergence and anisotropic dark energy in galaxy redshift surveys

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Analyses of upcoming galaxy surveys will require careful modelling of relevant observables such as the power spectrum of galaxy counts in harmonic space $C\ell(z,z')$. We investigate the impact of disregarding relevant relativistic effects by considering a model of dark energy including constant sound speed, constant equation of state w_0, and anisotropic stress. Here we show that neglecting the effect of lensing convergence will lead to substantial shifts in cosmological parameters such as the galaxy bias b_0, the value of the dark energy equation of state today w_0, and the Hubble constant H_0. Interestingly, neglecting the effect of lensing convergence in this kind of models results in shifting H_0 downwards, something which could shed light on the current tension between local and CMB determinations of the Hubble constant.

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