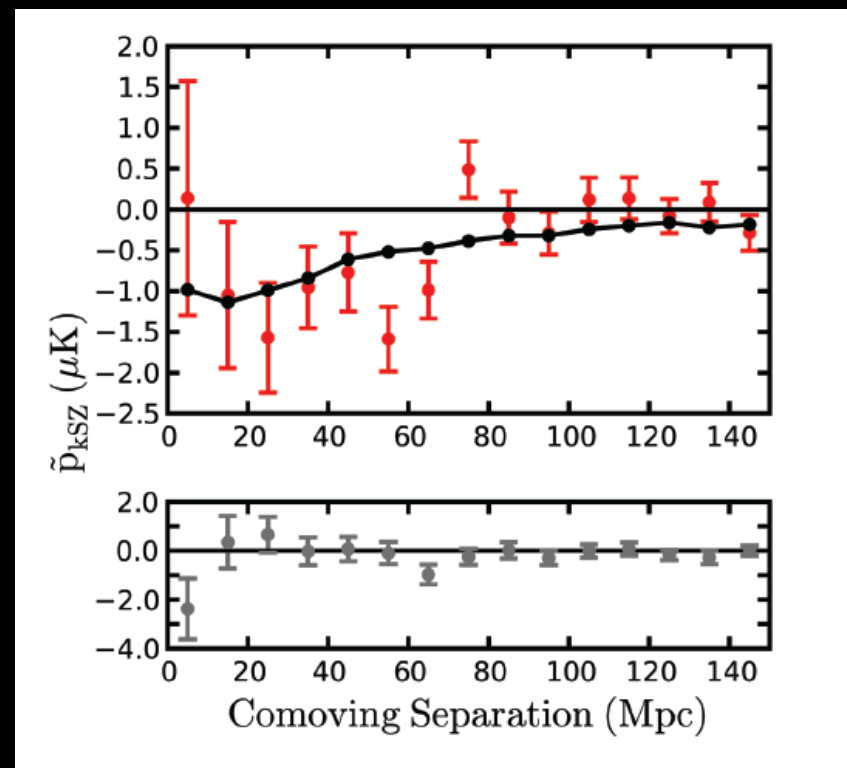


$$v_{ij}(r, a) = -\frac{2}{3} H(a) a \frac{d \ln D_a}{d \ln a} \frac{r \bar{\xi}^{\text{halo}}(r, a)}{1 + \xi^{\text{halo}}(r, a)}$$

Mean pairwise velocity
(from linear theory)



First detection

with ACT: Hand et al., PRL, arXiv: 1203.4219

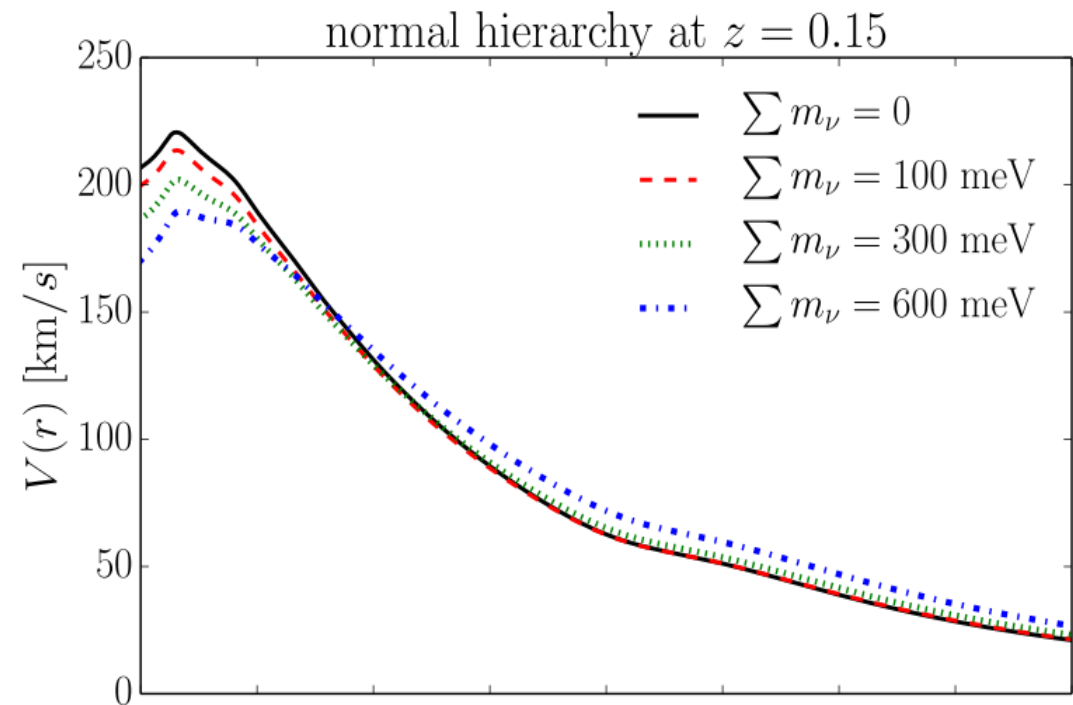
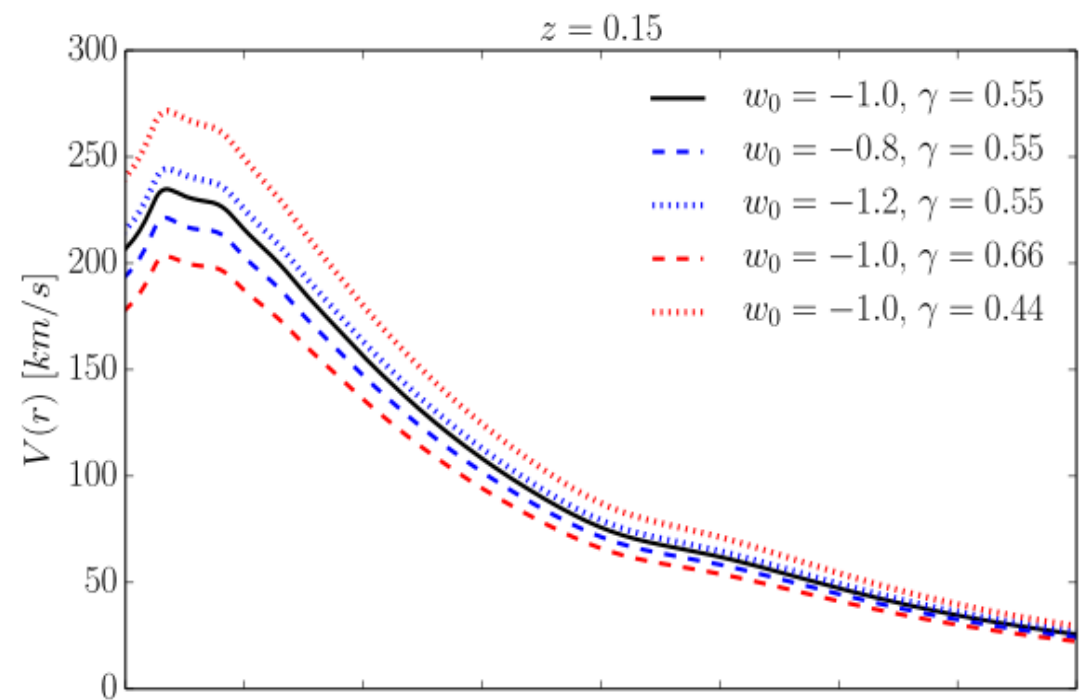
Current data allow detection but
constraining cosmology is still
difficult.

Potential for cosmological constraints:

See also:

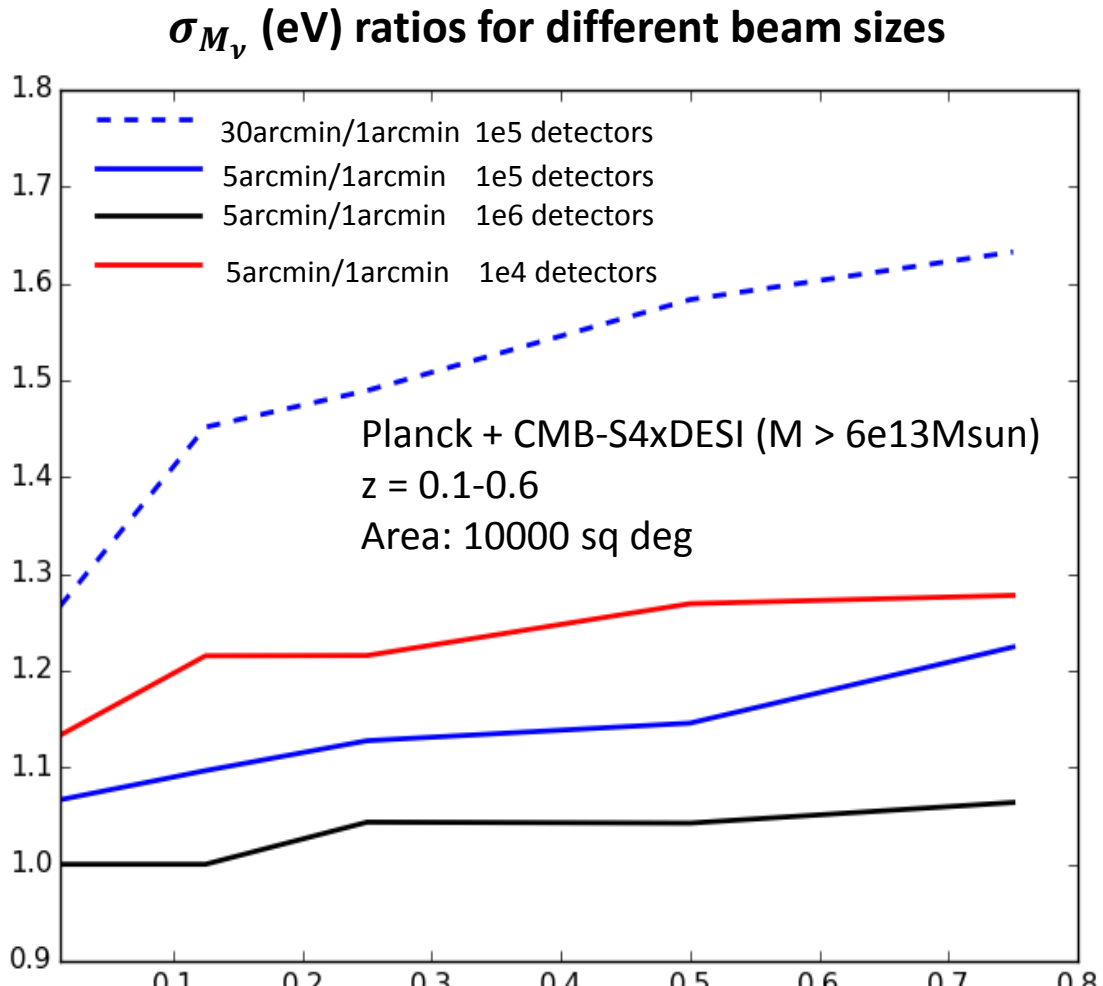
Mueller, De Bernardis, Bean, Niemack
(APJ - arXiv:1408.6248): dark energy

Mueller, De Bernardis, Bean, Niemack
(PRD - arXiv:1412.0592): massive neutrinos



Preliminary forecasts:

- Assumes perfect CMB removal: the effect of angular resolution might be more important with proper forecasts (work in progress...)



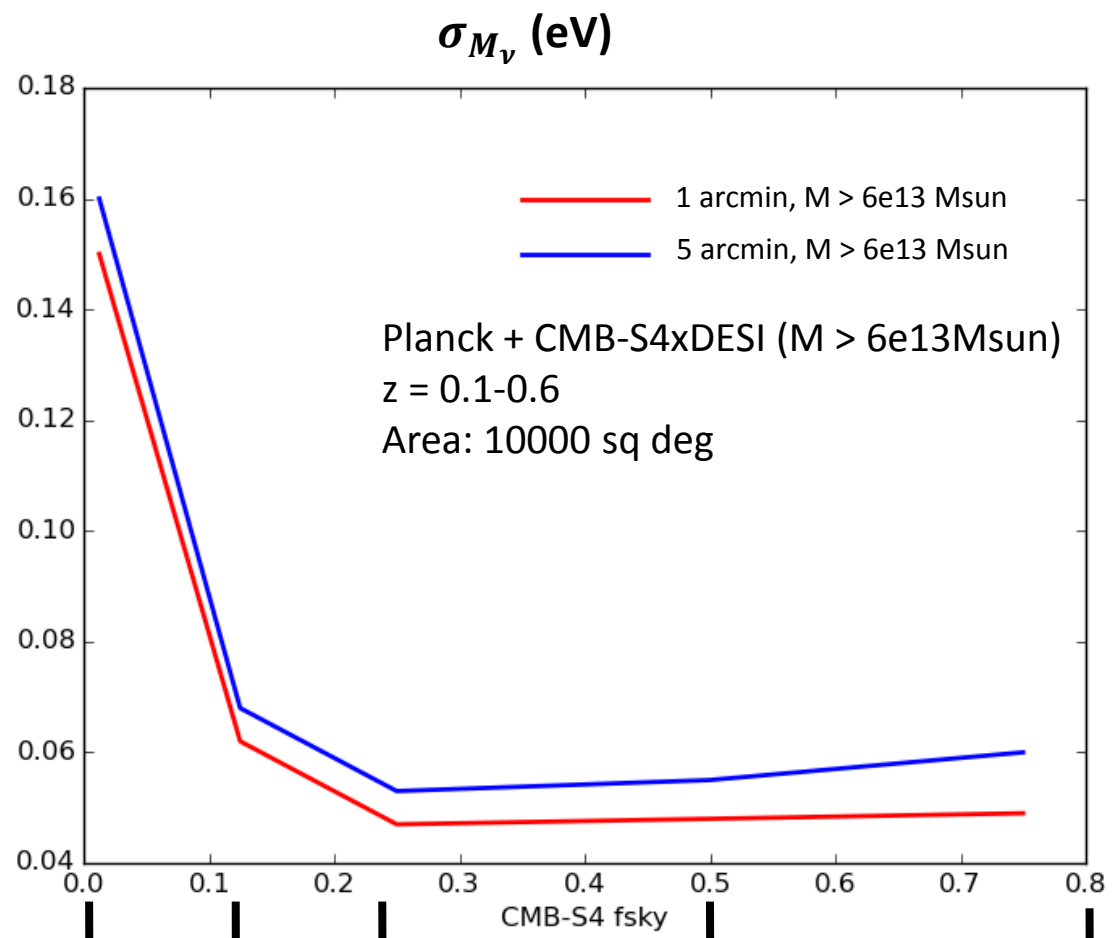
of detectors

Sensitivities (μk arcmin)	<u>1e4:</u>	0.8	2.4	3.3	4.7	5.8
	<u>1e5:</u>	0.2	0.8	1.1	1.5	1.8
	<u>1e6:</u>	0.08	0.2	0.3	0.5	0.6

See also Wu, Dvorkin, Kuo et al (ApJ - arXiv:1402.4108) for detailed sensitivity numbers

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