

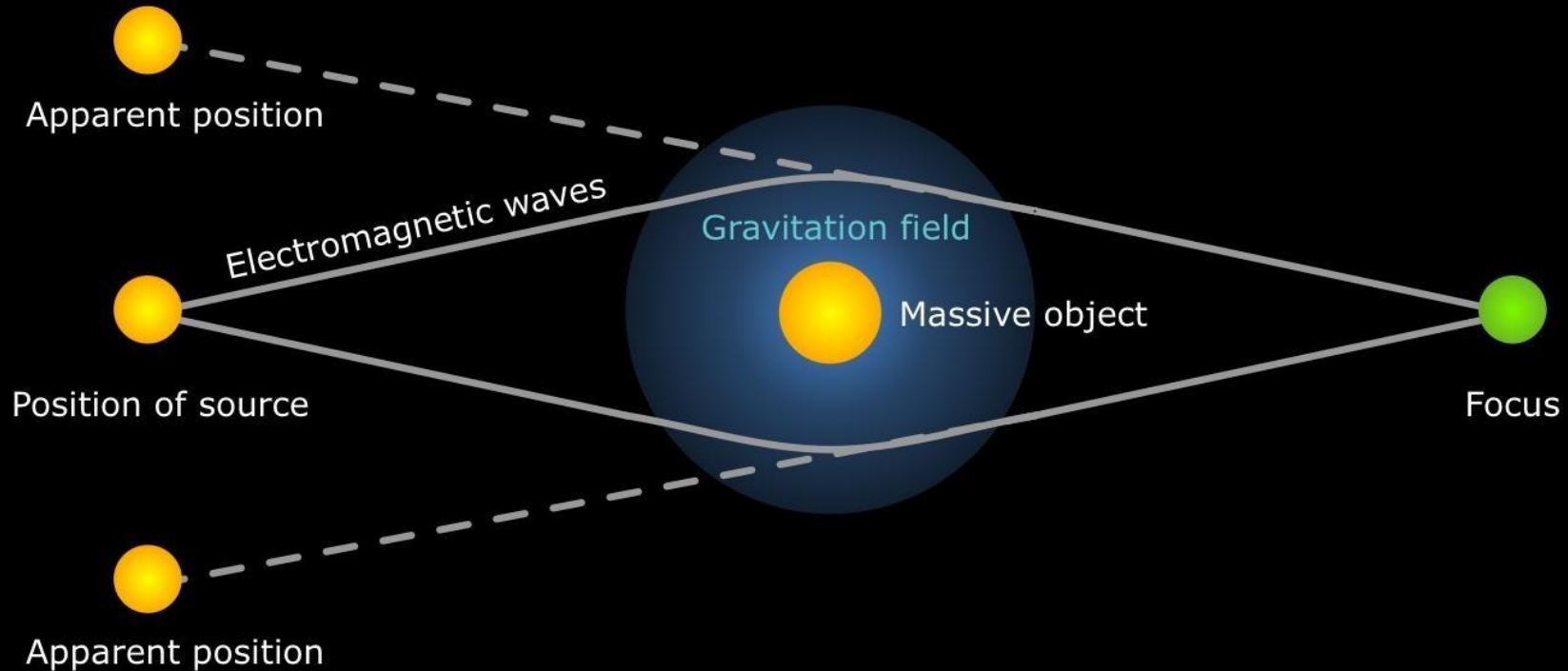


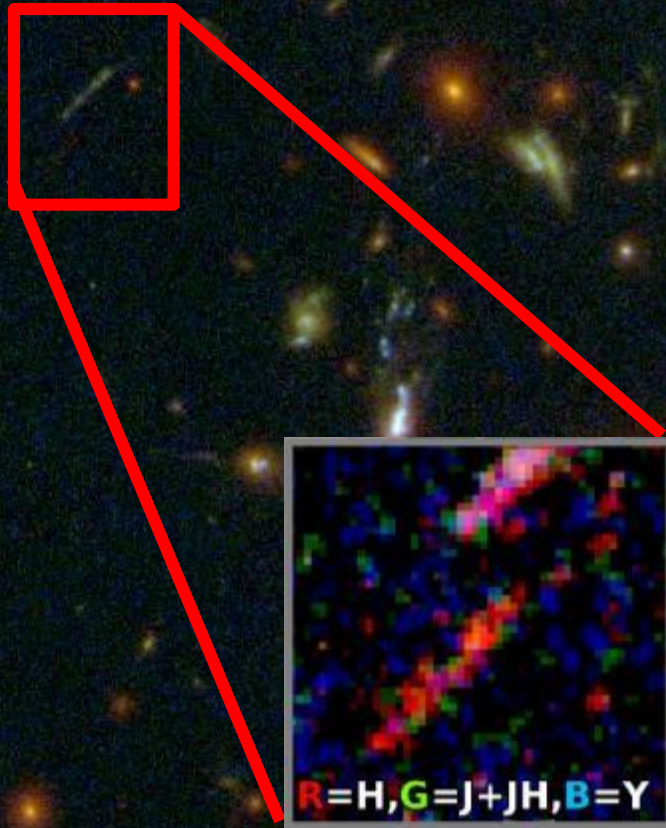
Modeling Strong Gravitational Lensing in Galaxy Clusters

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Strong gravitational lensing magnifies background objects

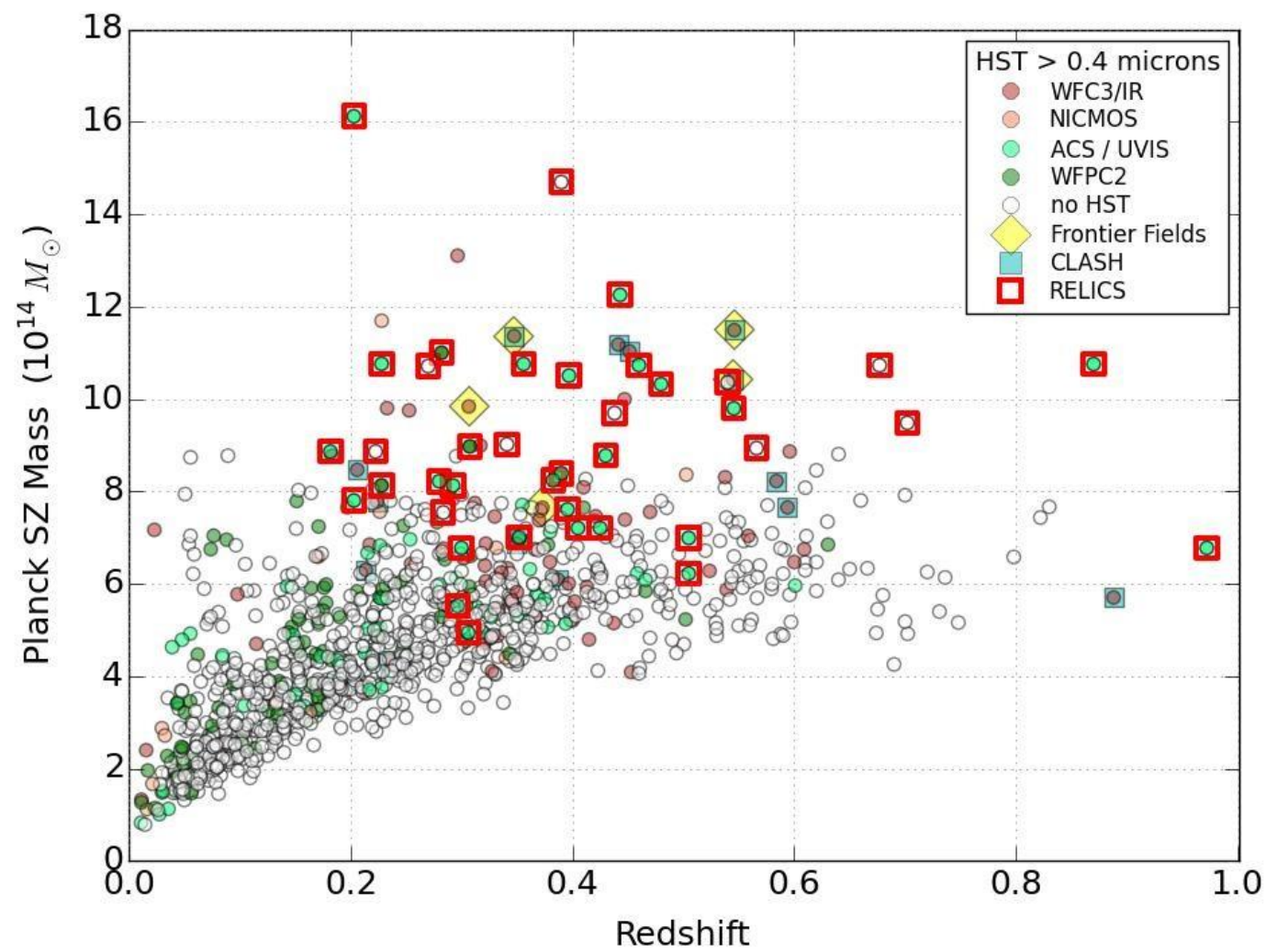




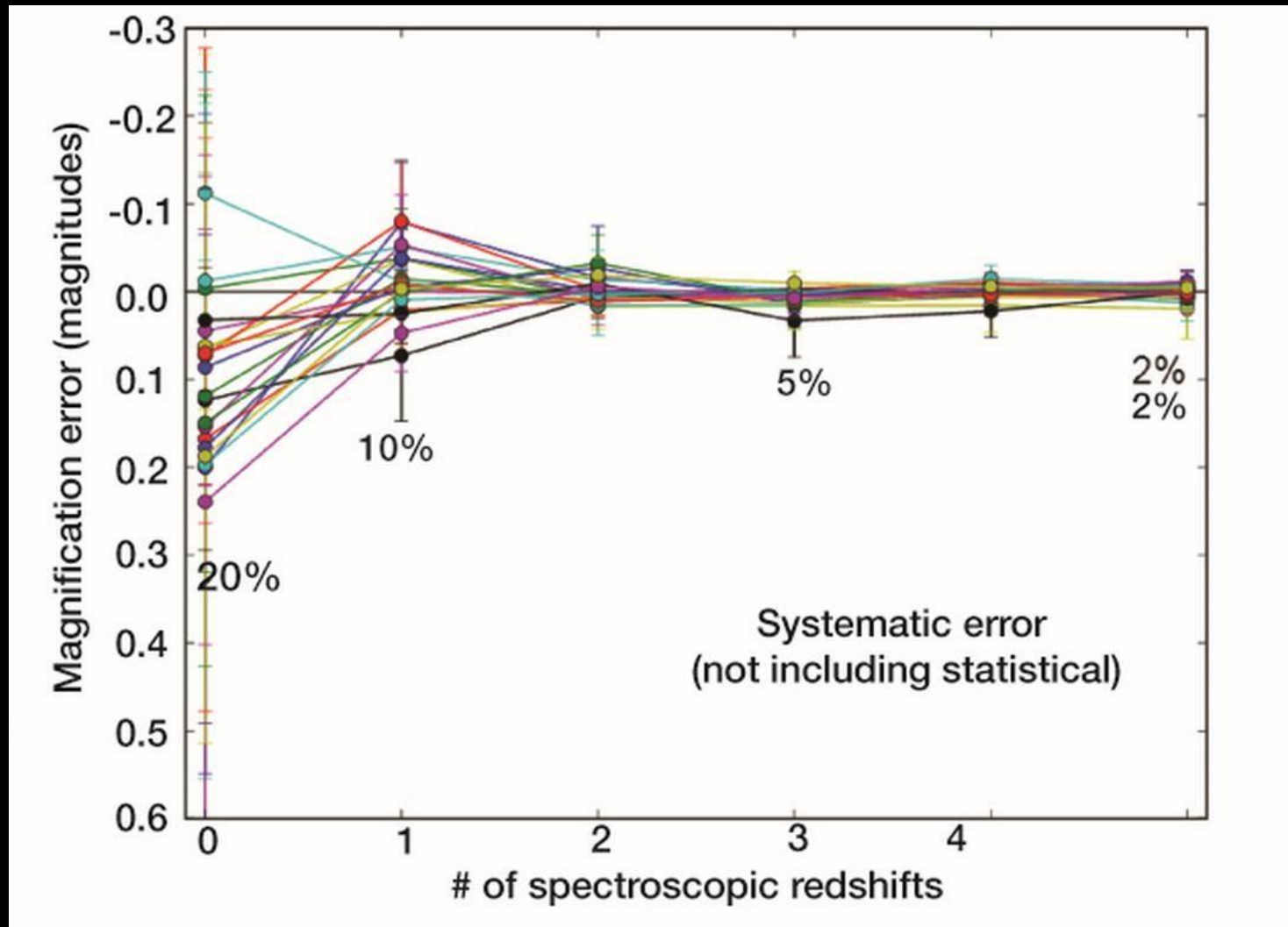
2.5" z~10 arc
Salmon et al. (2018)



- 188 orbit HST survey
- Provided HR imaging of 41 galaxy clusters
- ACS and WFC3/IR camera
- 5 orbits/cluster
- Half selected for large Planck mass, half selected based on previous imaging

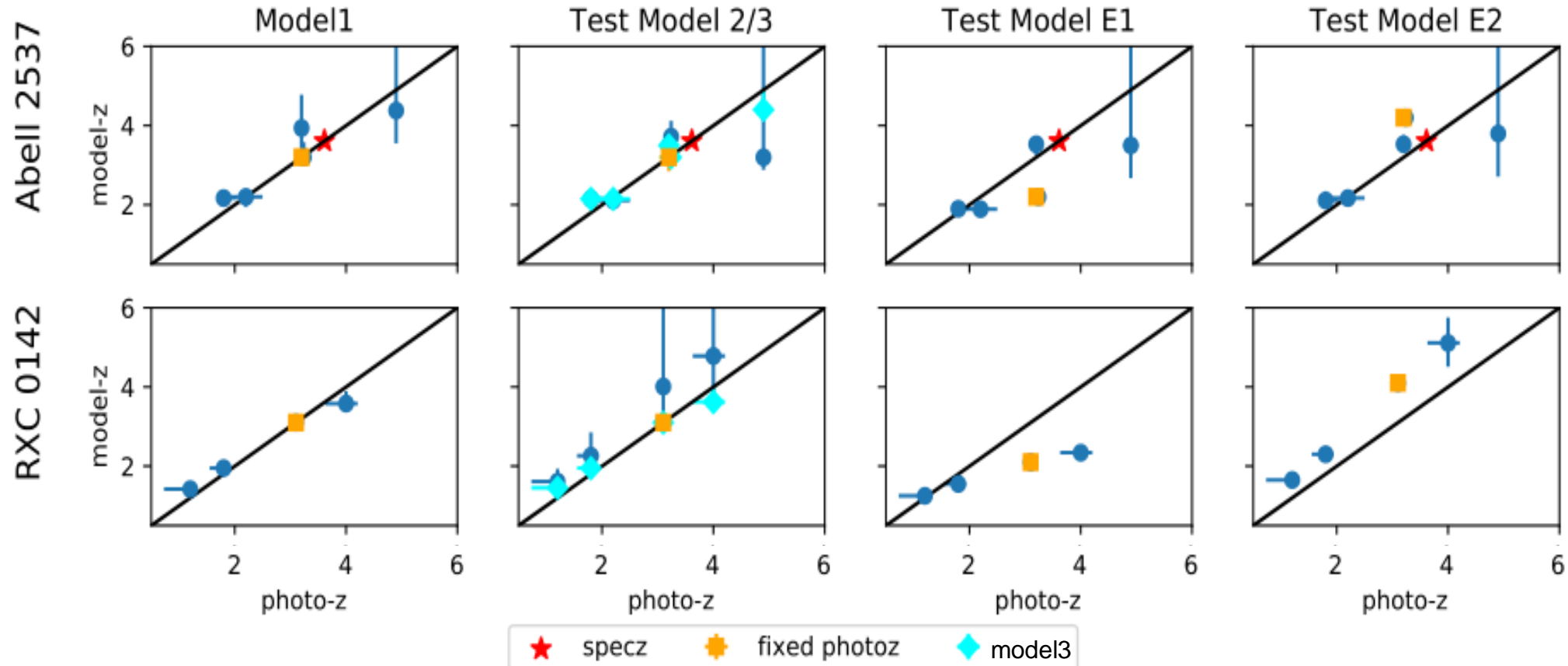


Spectroscopic redshifts needed to constrain models

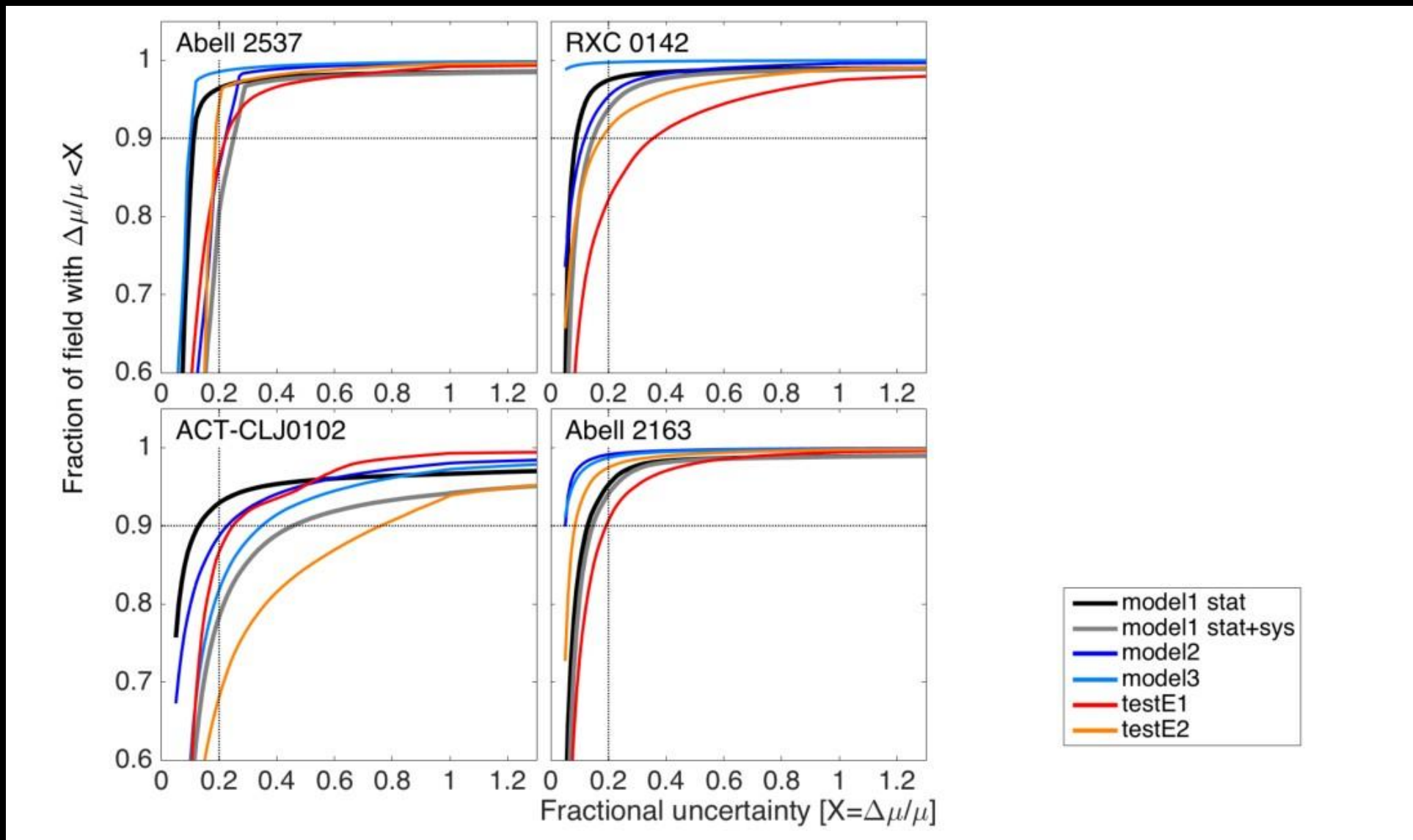


Johnson & Sharon (2016)

Build test models with different photo-z constraints



Average uncertainty in FoV depends on # constraints



Summary

- Lensing models quantify magnification of interesting background objects (ex. $z \sim 10$ galaxies)
- Accuracy of parametric *Lenstool* models relies on precise redshift measurements
- In the absence of spectroscopic redshifts, photometric redshift models generally give magnifications with errors of $>25\%$ (and up to $>10\%$ depending on system complexity and number of constraints) in the inner region of the cluster

arXiv:1710.09329