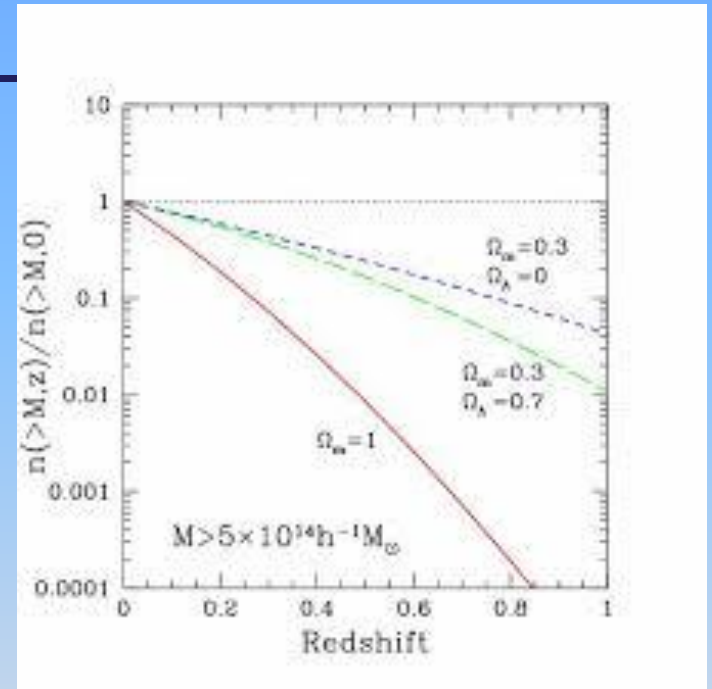
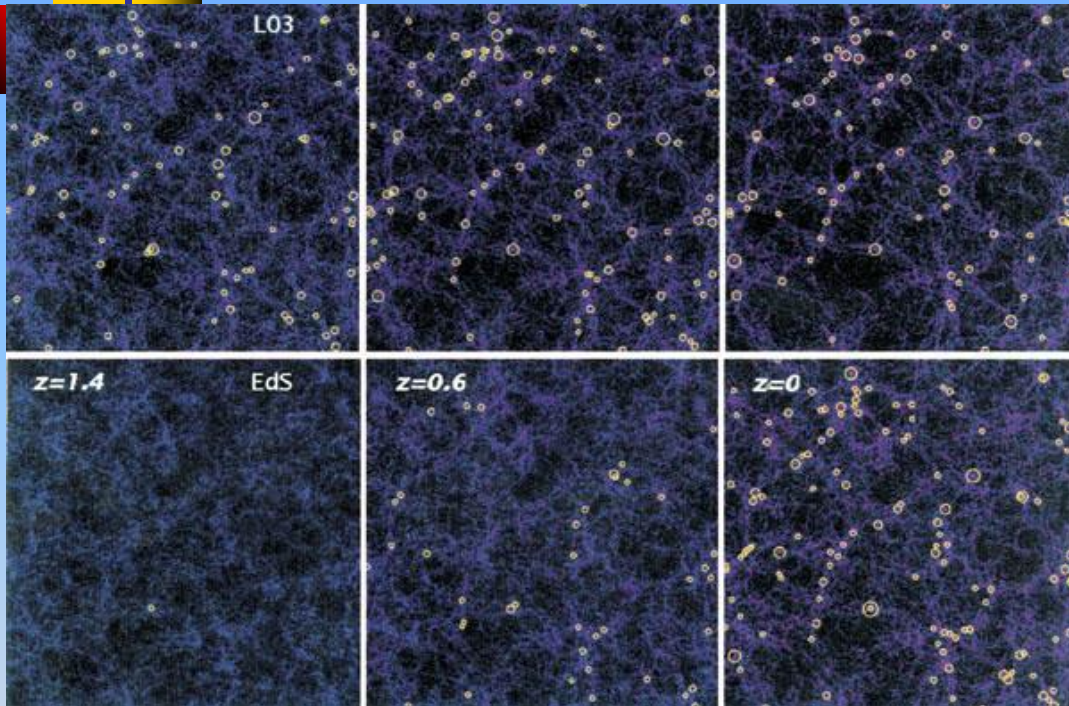
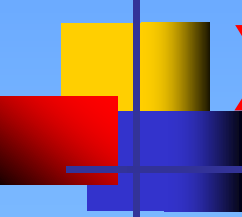


Retrospects and prospects of X-ray cluster surveys



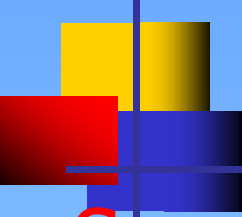
Rosati, Norman, Borgani 2002

Alexis Finoguenov

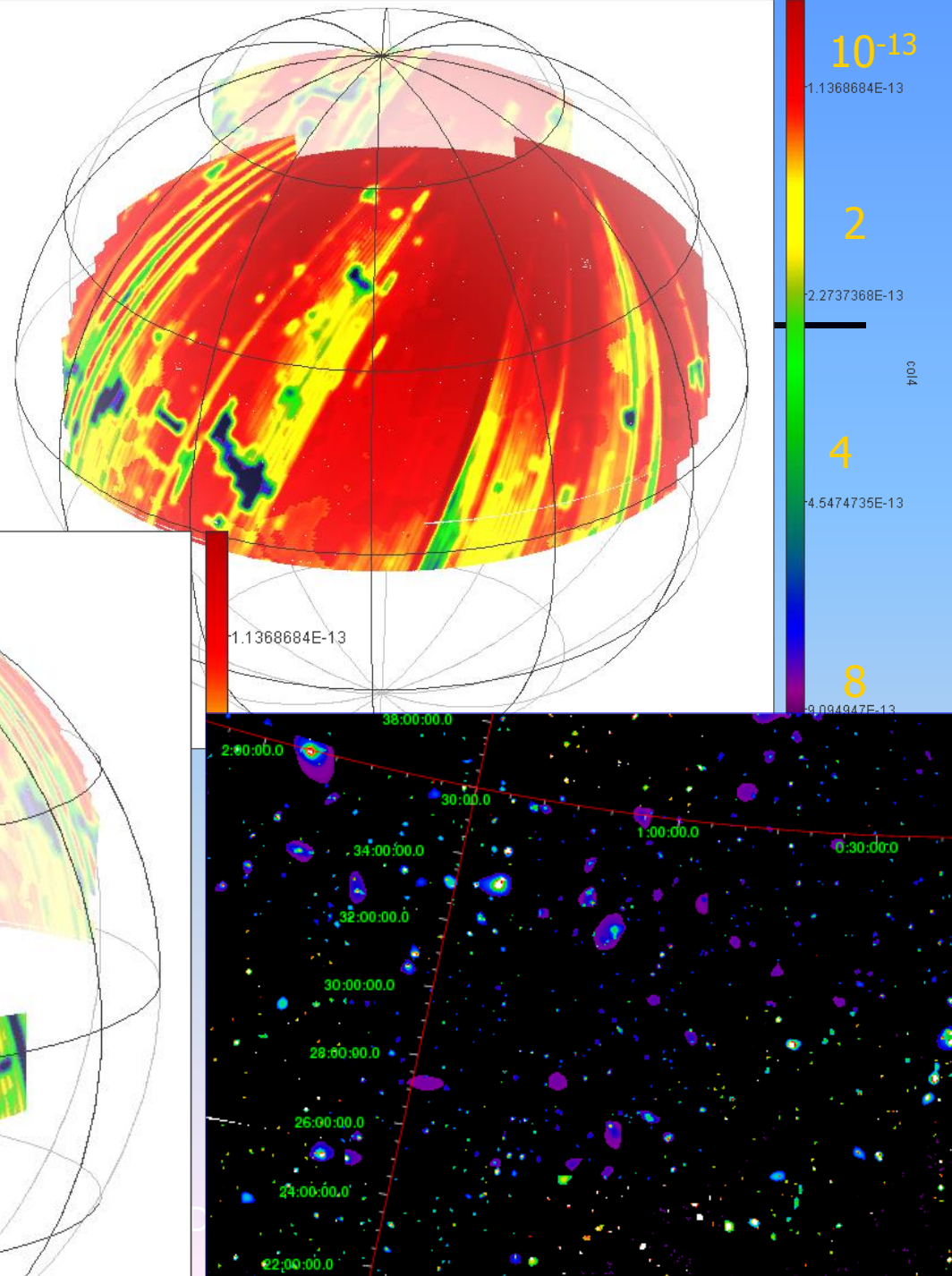
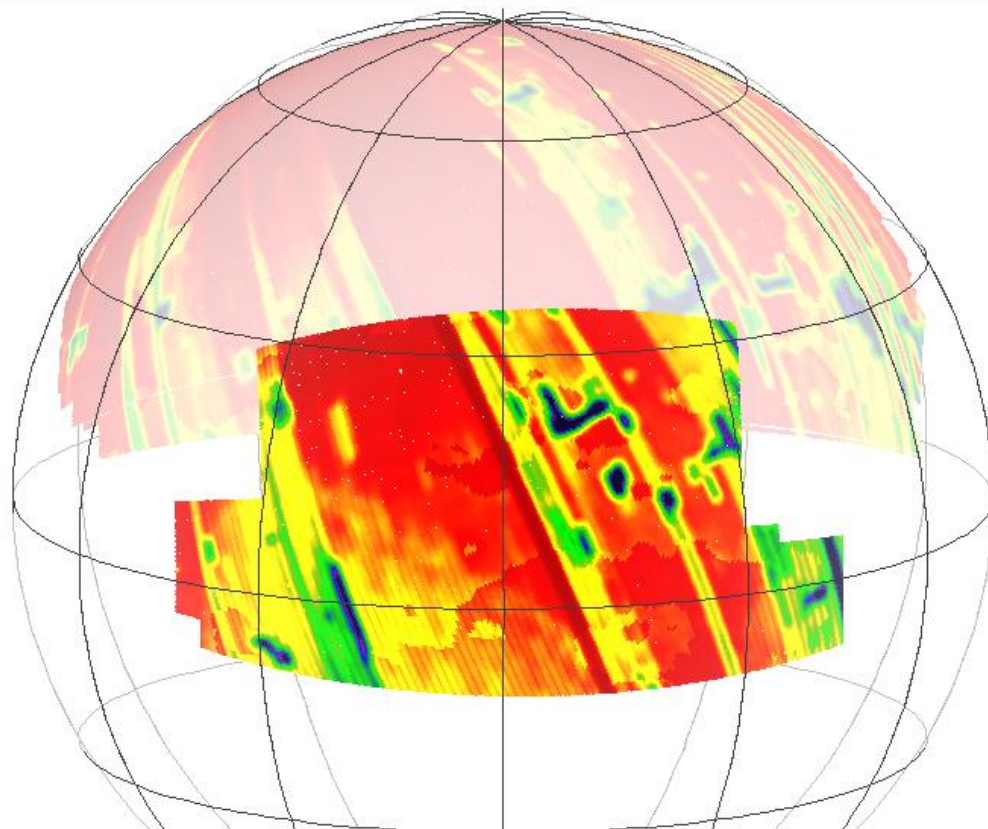


X-ray cluster identification

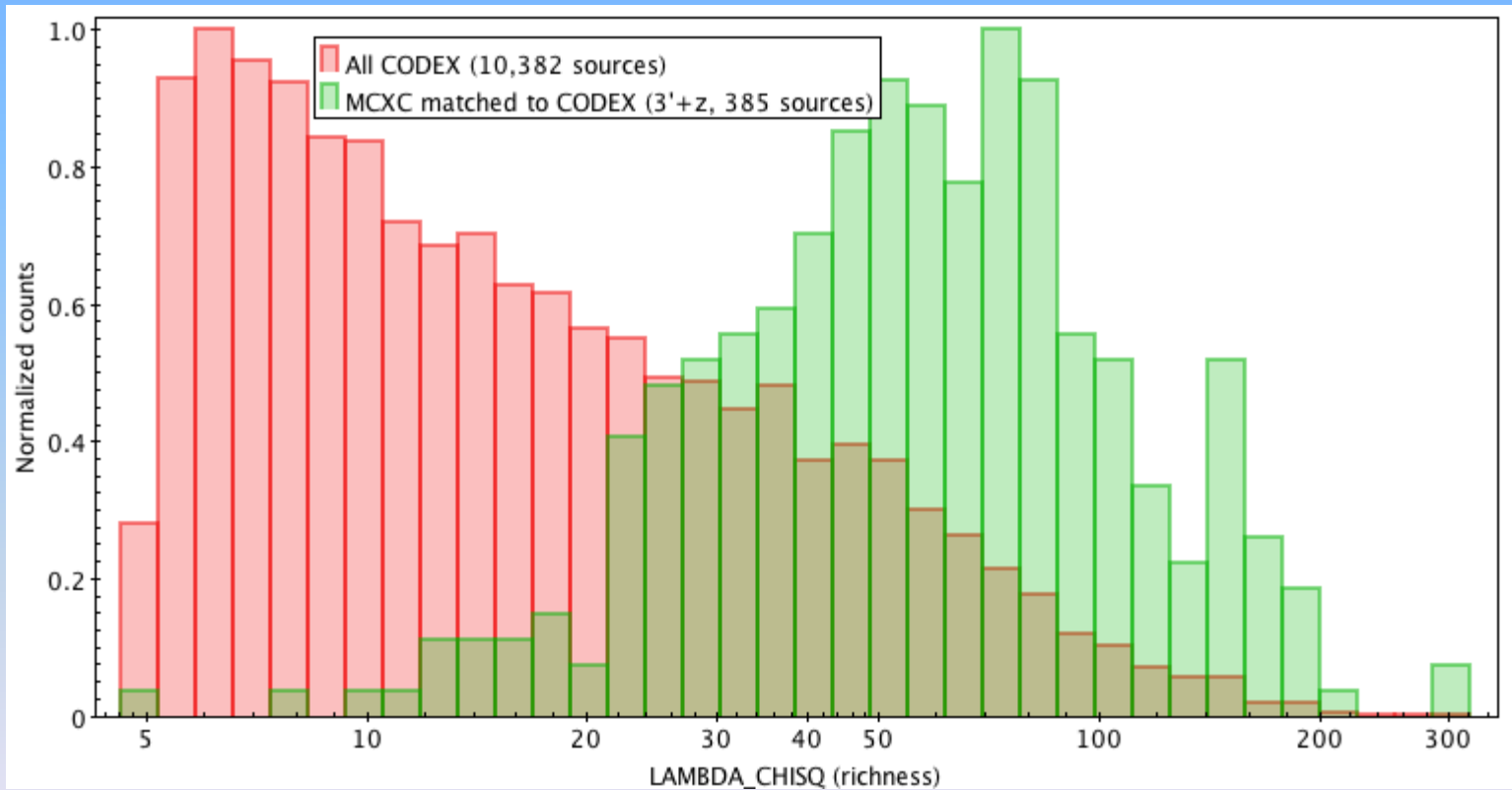
Point source+by eye BCS, REFLEX, NORAS, MACS	Point source+optical survey CODEX, RASSinDES
Extended source+by eye RDCS, 400 sq.deg., SPT	Extended source+optical survey COSMOS, CDFS, AEGIS, SXDF, XMM-XXL



Sensitivity of RASS on BOSS footprint



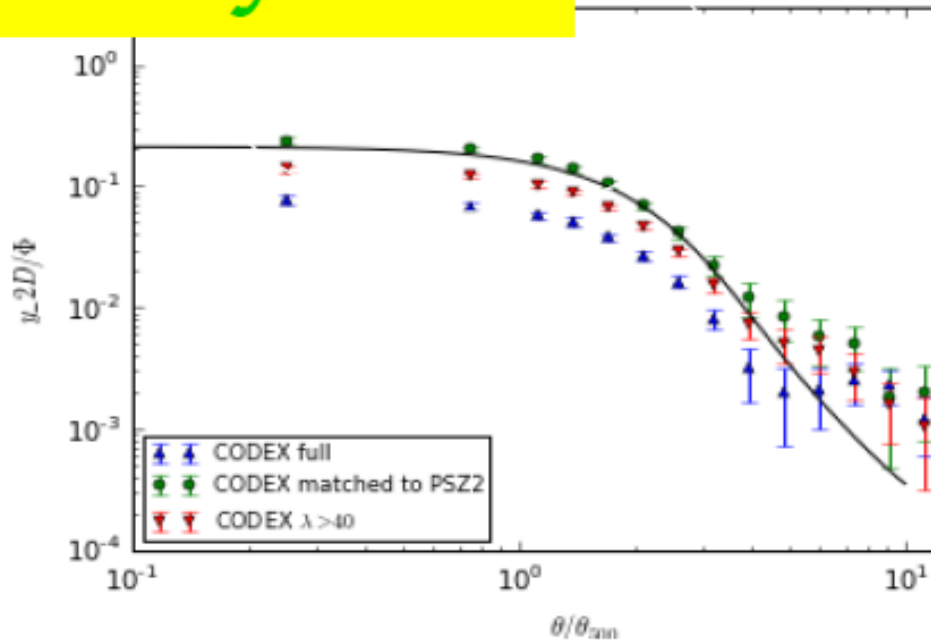
CODEX and MCXC



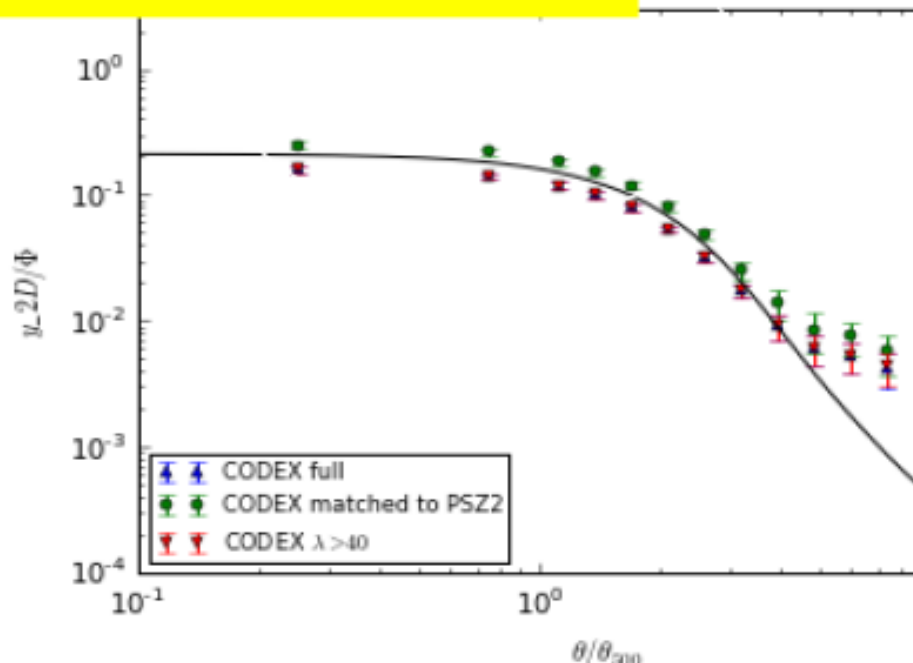
RASS vs Redmapper mass estimates

$z: [0.3, 0.4]$

X-Ray M500

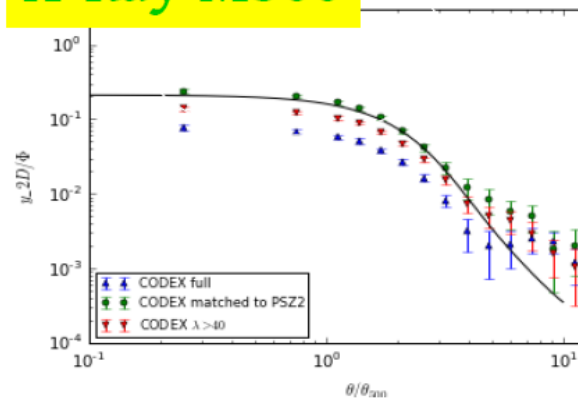


Optical M500

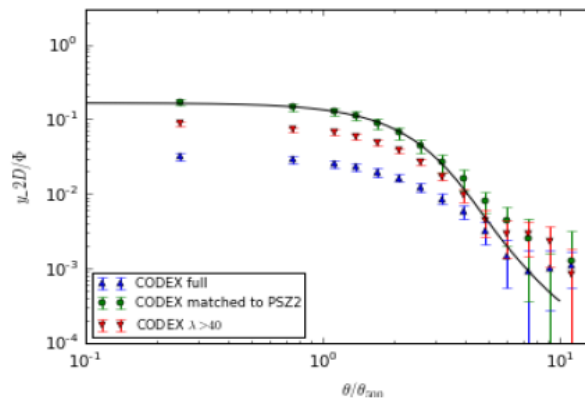


$z: [0.3, 0.4]$

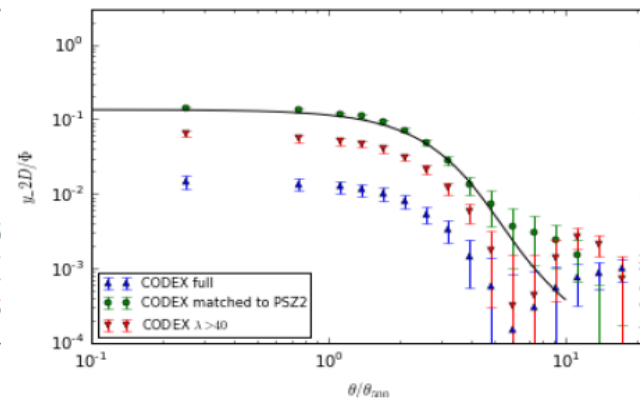
X-Ray M500



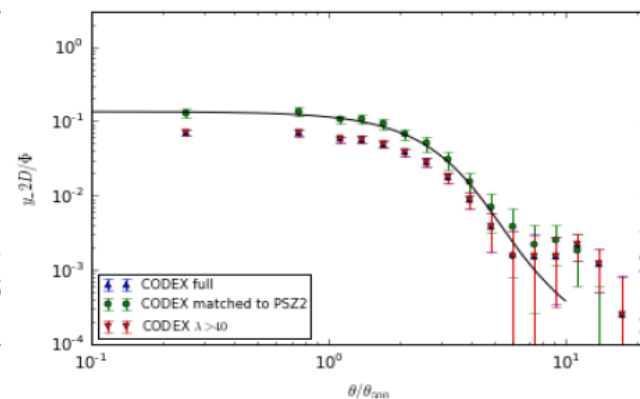
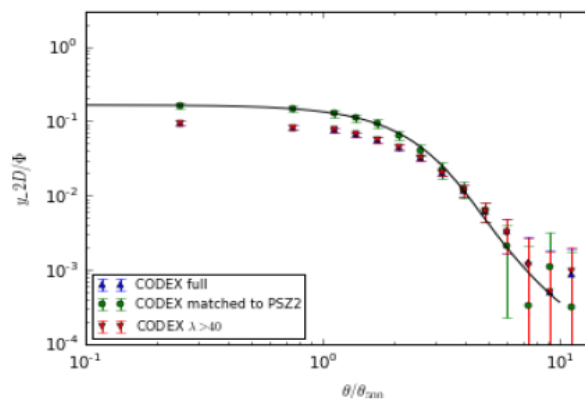
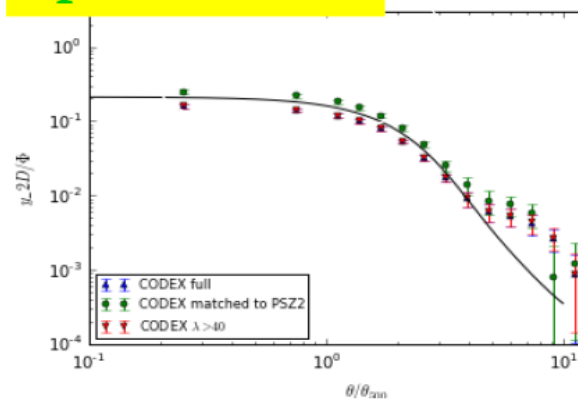
$z: [0.4, 0.5]$



$z: [0.5, 0.6]$

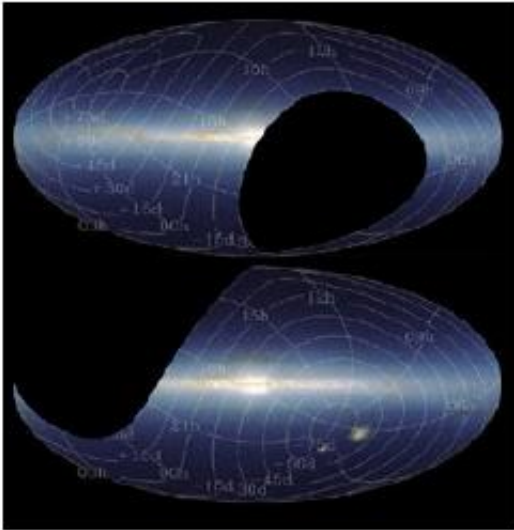


Optical M500



SDSS-IV surveys (2014 through 2020)

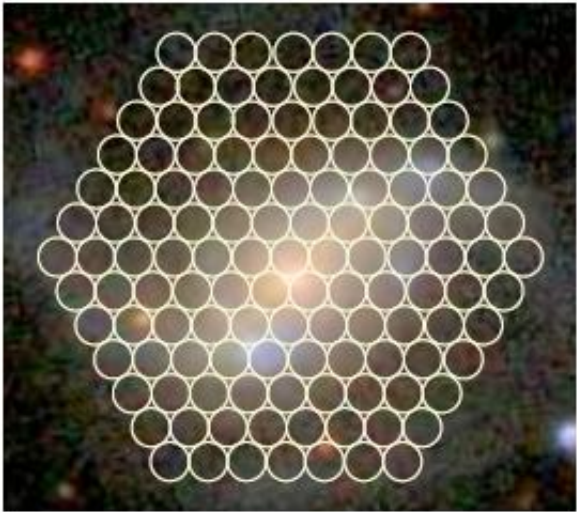
APOGEE-2 



Maps hundreds of thousands of individual stars in the Milky Way.

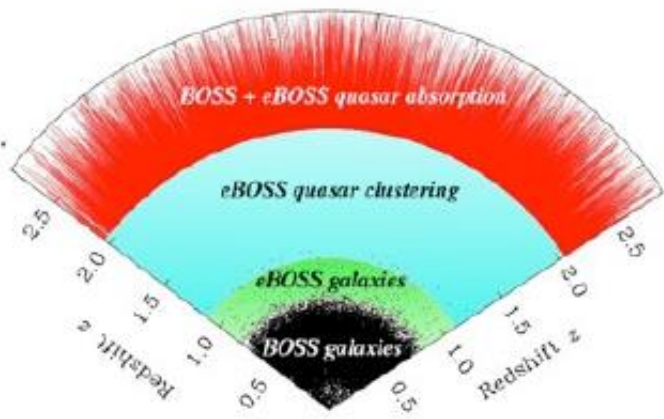
galaxy evolution & dark matter

MaNGA 



Maps 10,000 nearby galaxies.

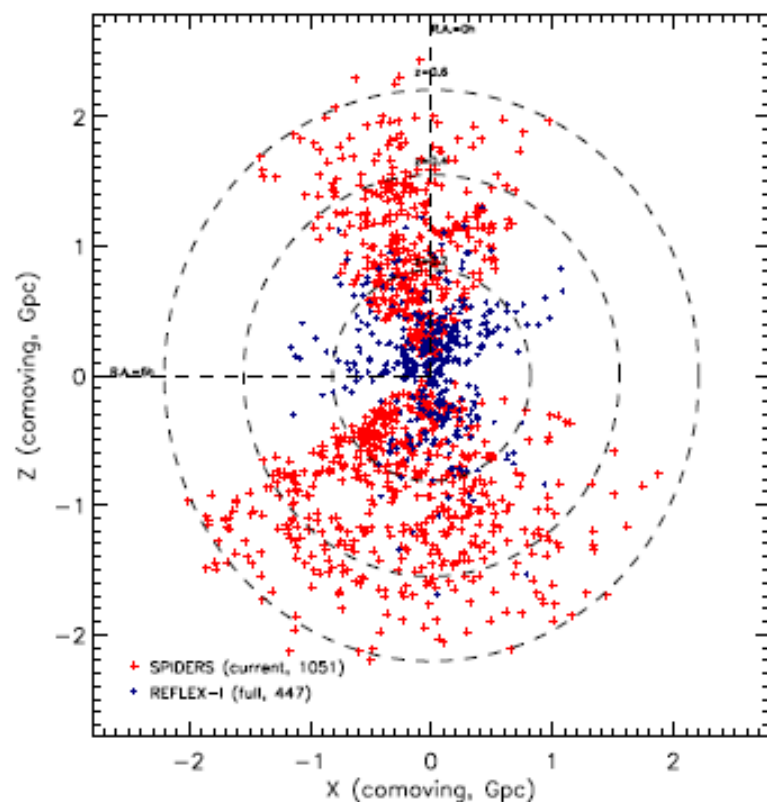
**eBOSS,
TDSS,
SPIDERS** 



Maps the Universe of galaxies and quasars. Especially quasars.

dark energy & cosmology

Galaxy clusters: status (1 yr $3/4$)



Status 2016-03-29 (CODEX)

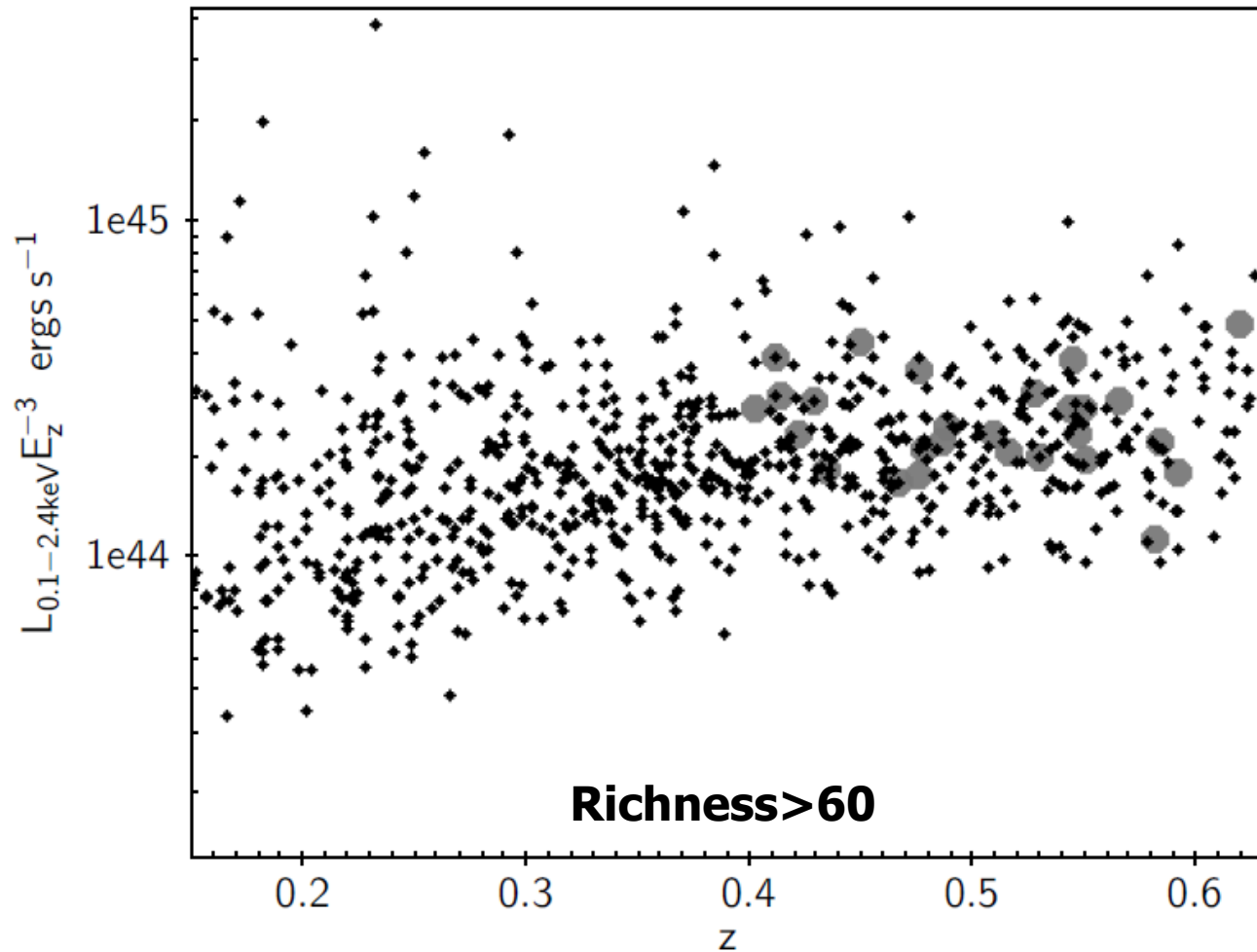
1942 candidates richness > 10

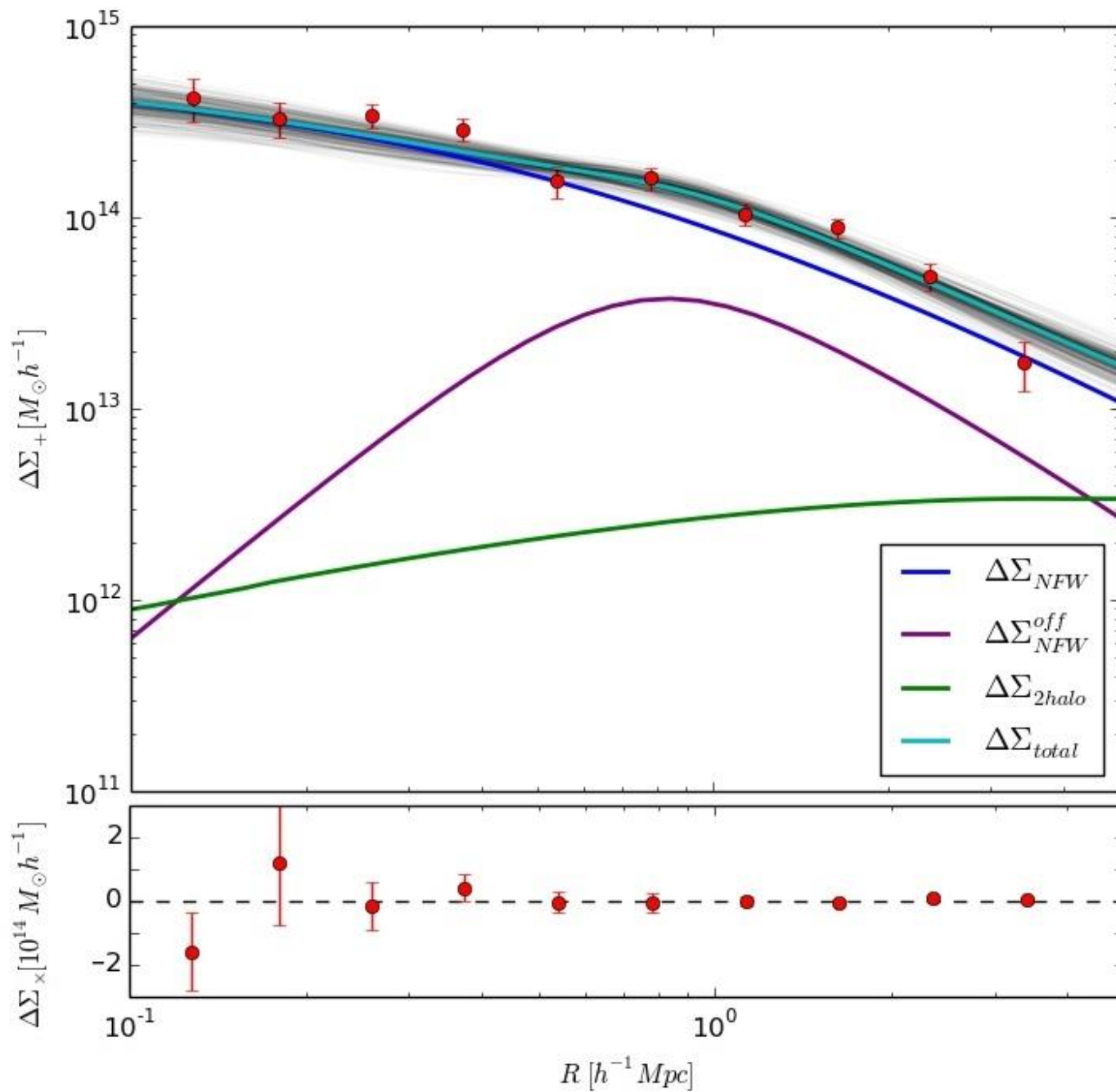
- 1307 $N_{spec} > 3$
- 754 $N_{spec} > 10$
- 427 $N_{spec} > 15$

Of them: 1600/1942 completed

- 1051 $N_{spec} > 3$
- 630 $N_{spec} > 10$
- 369 $N_{spec} > 15$

CFHT-CODEX 27-best sample



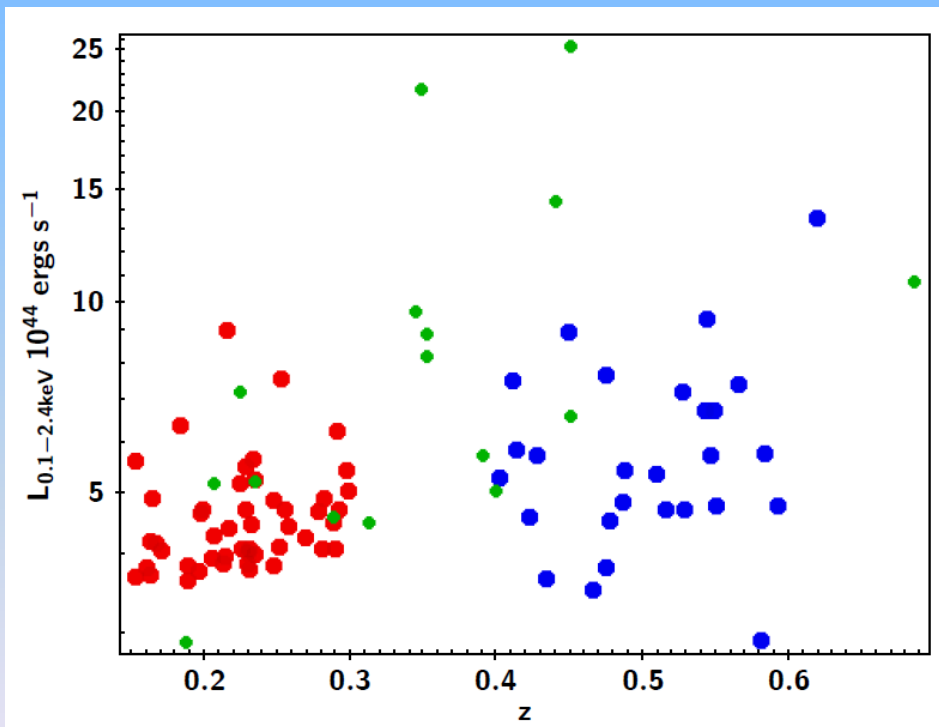


Cibirca+

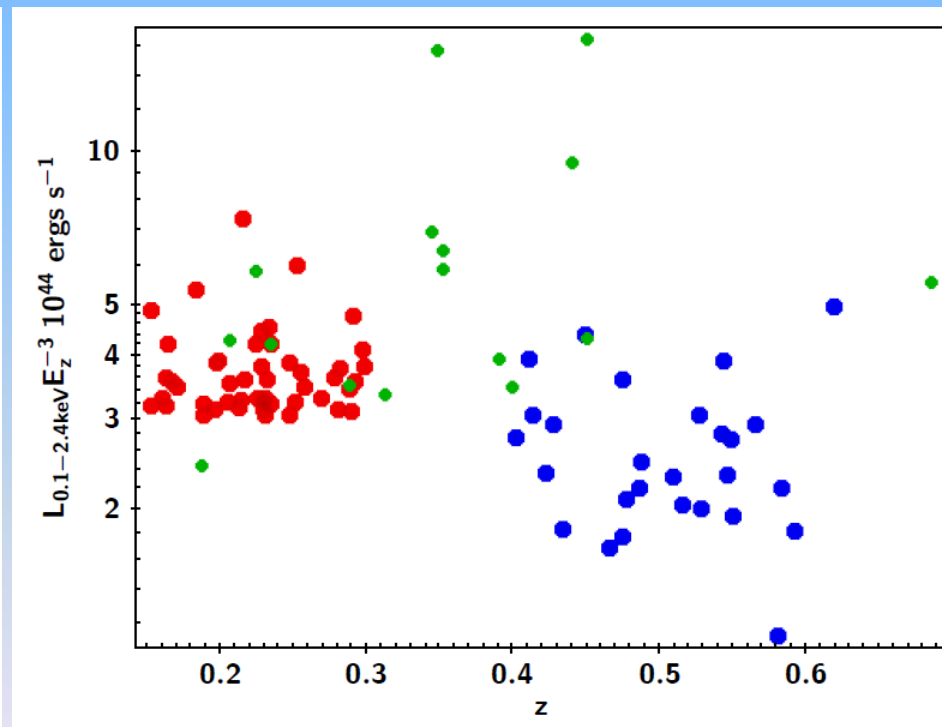
WL

model

LoCuSS, CLASH, CODEX

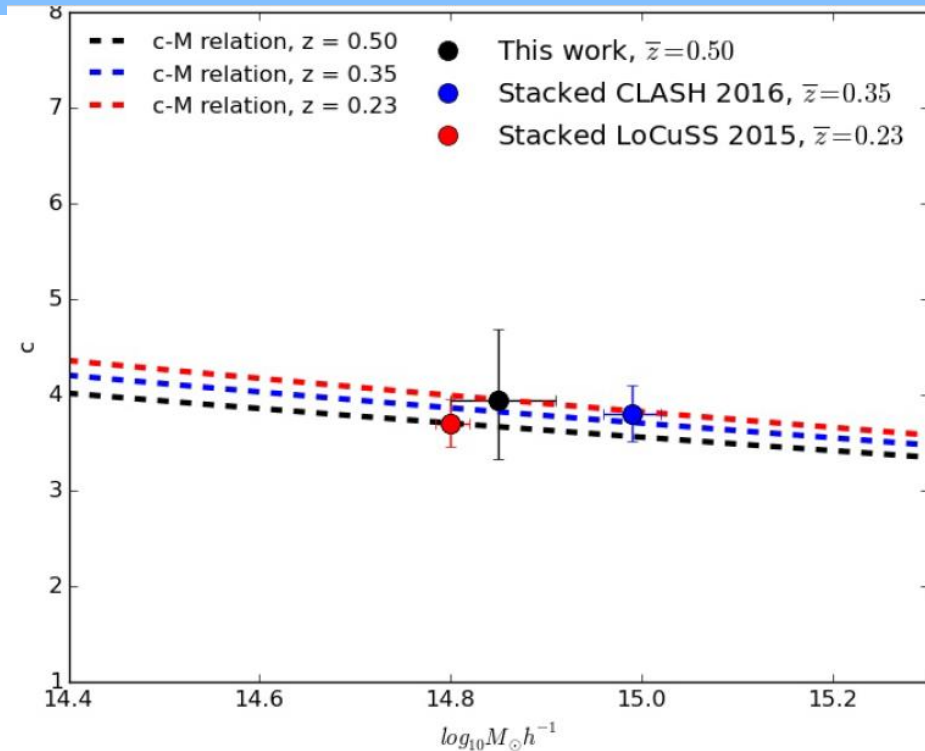
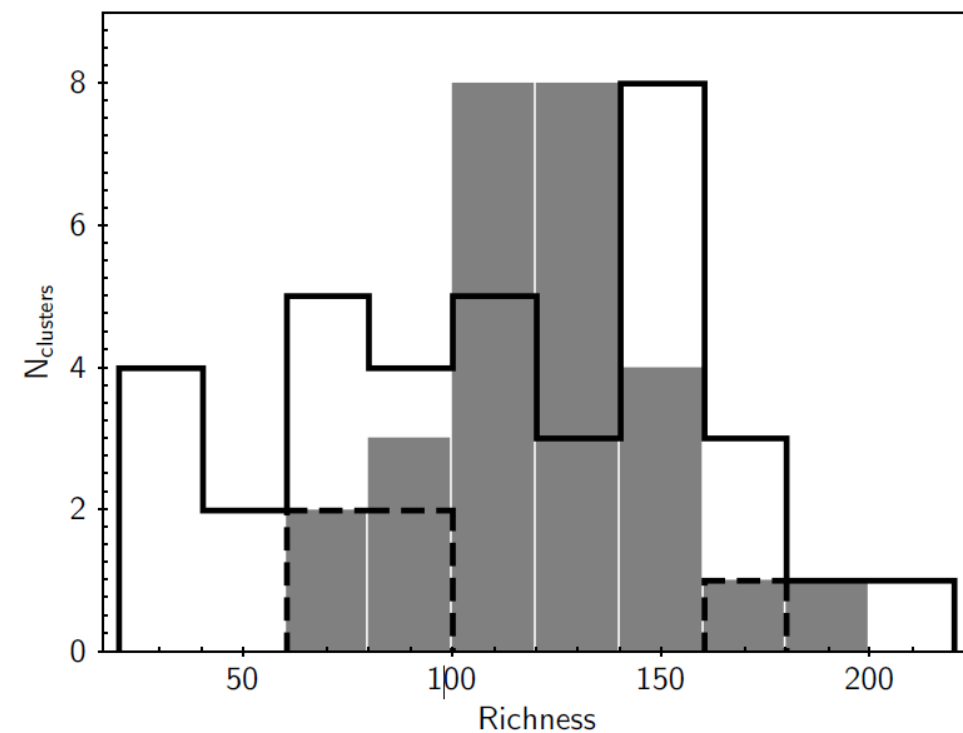


Alexis Finoguenov



CODEX

LoCuSS, CLASH, CODEX



AGN contamination line:

$$\langle L_{X\text{AGN}} \rangle * \text{HOD}$$

Ebrero XLF(z) + Allevato HOD

