



# AGN fraction in X-ray selected clusters and fields from $z = 0 - 0.5$

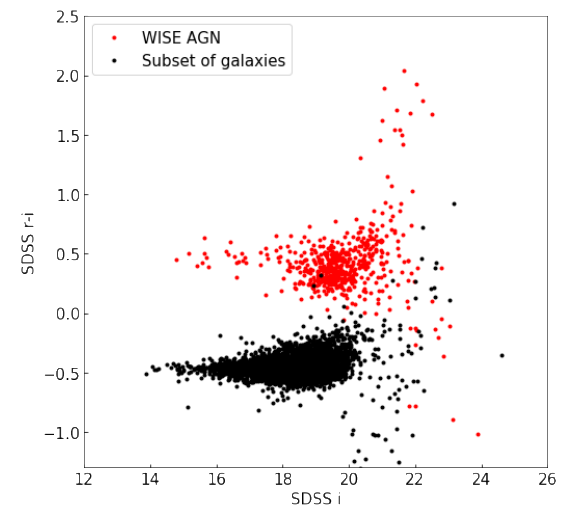
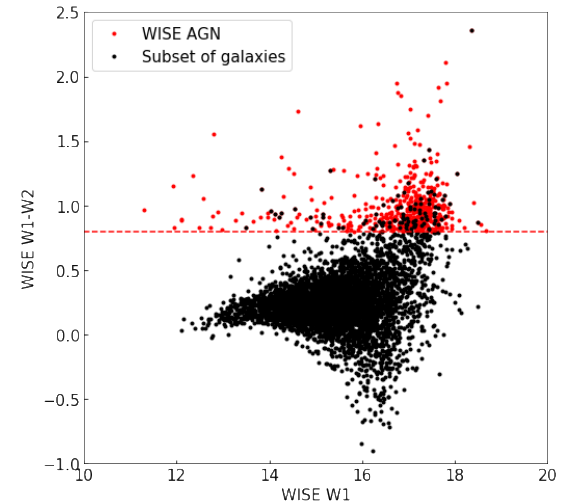


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# Motivation and Methodology

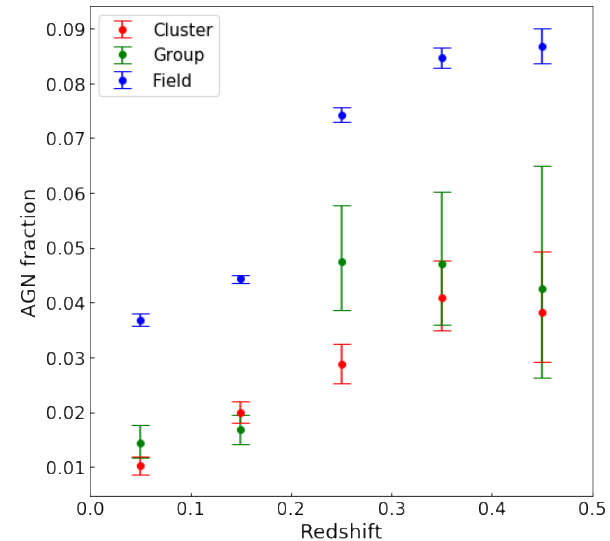
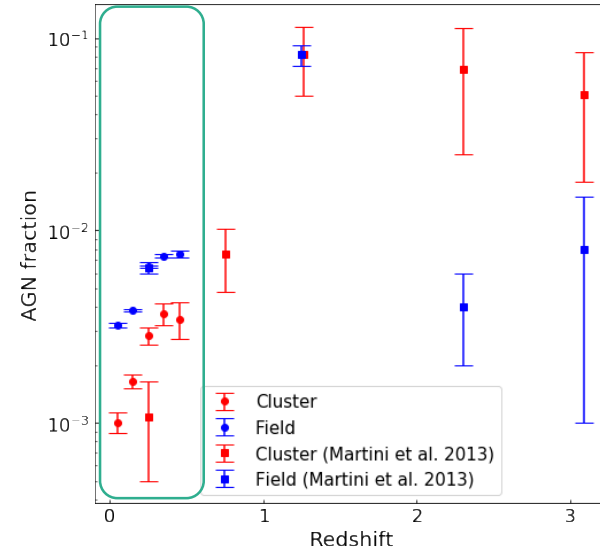
- Mergers, disc instability, tidal effects – possible triggering mechanisms
- Lopes+2017, Argudo-Fernandez+2018 -> different  $f_A$  in clusters vs. fields
- Yang+2018, Karhunen+2014, Miller+2003 -> no dependence on environment
- Largest X-ray selected cluster catalog used
- Cluster defined within  $R_{500}$
- Local field region from  $5x R_{500}$  to  $10x R_{500}$
- SDSS galaxies selected as cluster members and matched to WISE galaxies
- AGN sample selected using mid-IR colors (Stern et al. 2012)



Mishra & Dai 2019 (subm.)

# Results

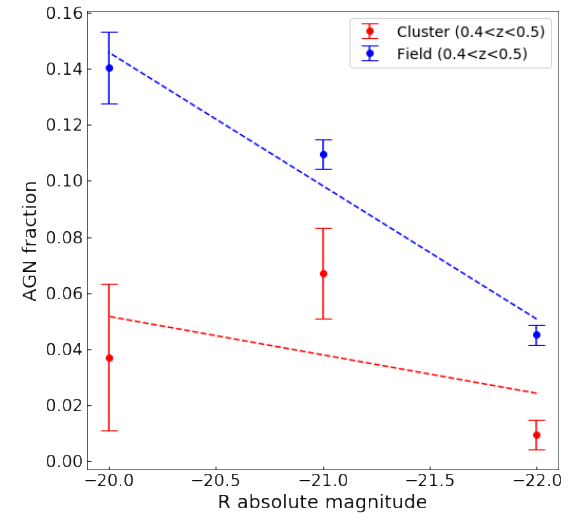
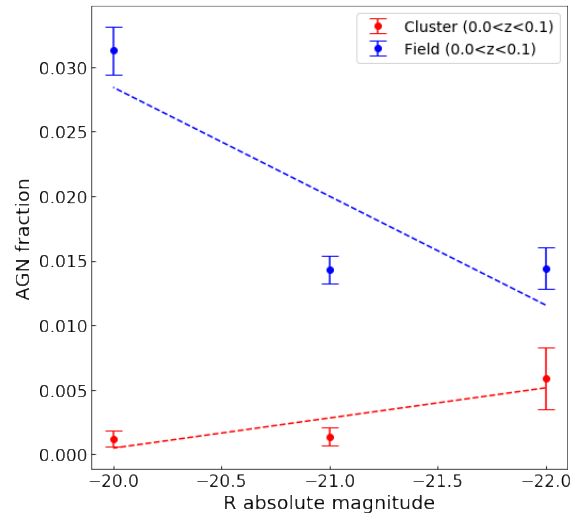
- Higher  $f_A$  in fields, comparable values in low and high-mass objects
- $f_A (z < 0.1)$  in cluster =  $0.012 \pm 0.002$
- Field =  $0.037 \pm 0.001$
- $f_A (z < 0.5)$  in cluster =  $0.039 \pm 0.009$
- Field =  $0.087 \pm 0.003$
- Comparable for  $z < 0.4$  and  $z < 0.5$



Mishra & Dai 2019 (subm.)

# Results

General negative correlation for field, but contrasting trends for cluster galaxies. For low  $z$ , it decreases with brightness, whereas the opposite is seen for  $0.4 < z < 0.5$



Mishra & Dai 2019 (subm.)

## Future Work

Extend the SWIFT AGN and Cluster Survey catalog (Dai et al. 2015) to increase the number of X-ray clusters to increase the sample size for  $z < 0.5$  range and extend the study to  $z < 1.0$  (Mishra et al.; in prep)