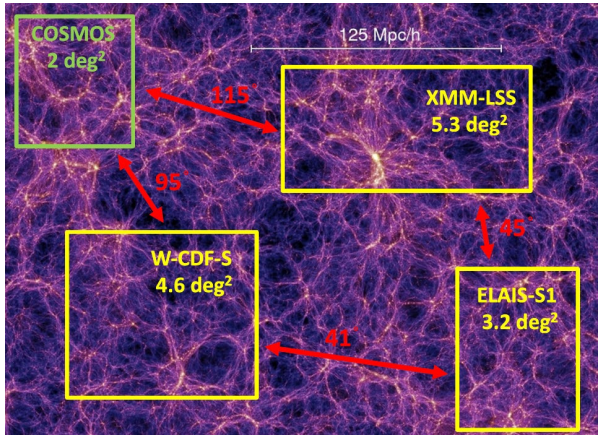
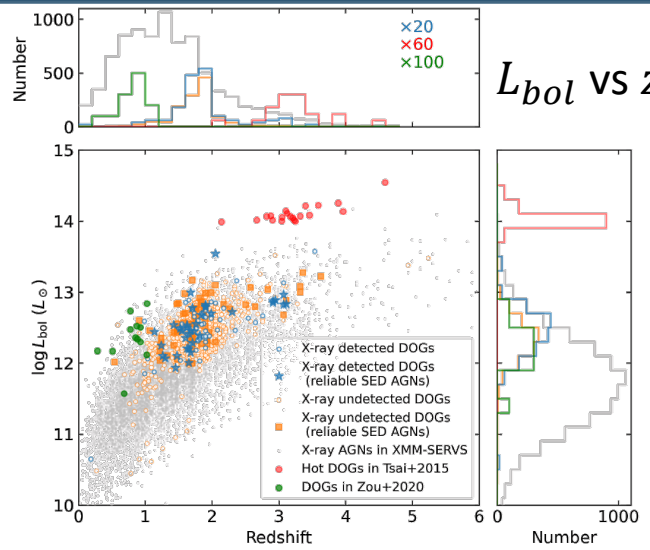
We select and characterize a large sample of Dust-Obscured Galaxies (DOGs) in the XMM-SERVS fields, leveraging superb multiwavelength data from X-rays to radio

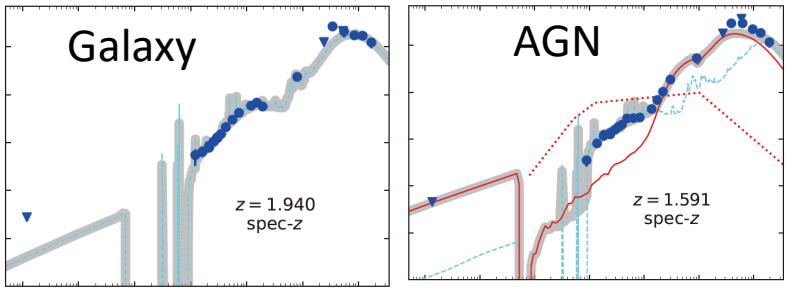


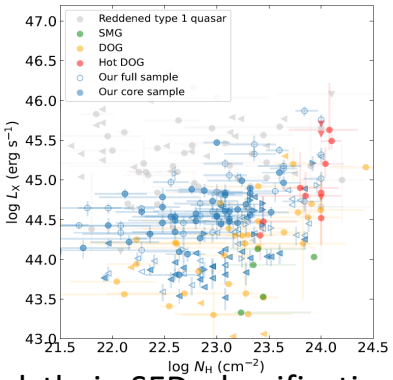
Good future prospects!



- XMM-SERVS consists of three **LSST Deep Drilling Fields (DDFs)**: W-CDF-S, ELAIS-S1, and XMM-LSS, totaling ≈ 13 deg^2
- Foundational work including **photo-zs**, **SED-fitting**, **AGN catalogs**…(Chen+2018, Ni+2019, Zou+2020, Zou+2022)
- **Largest sample of DOGs with comprehensive multiwavelength characterization!**

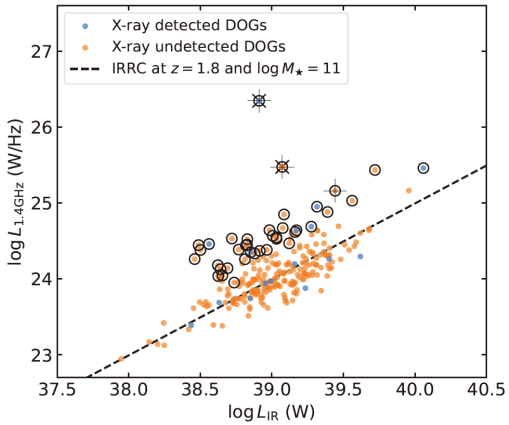
- We select 3738 DOGs at ***z* ≈ 1.6–2.1**, and 178 are detected in X-rays with **median** $\log L_{X,obs} = 44.3$



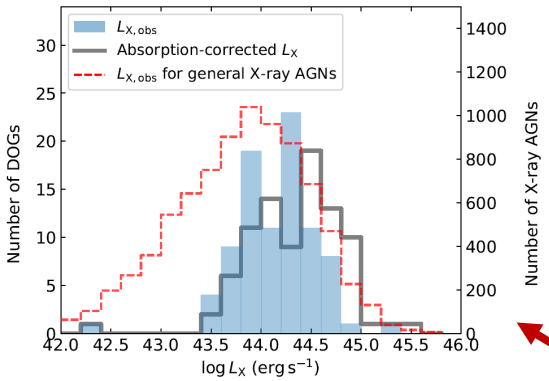


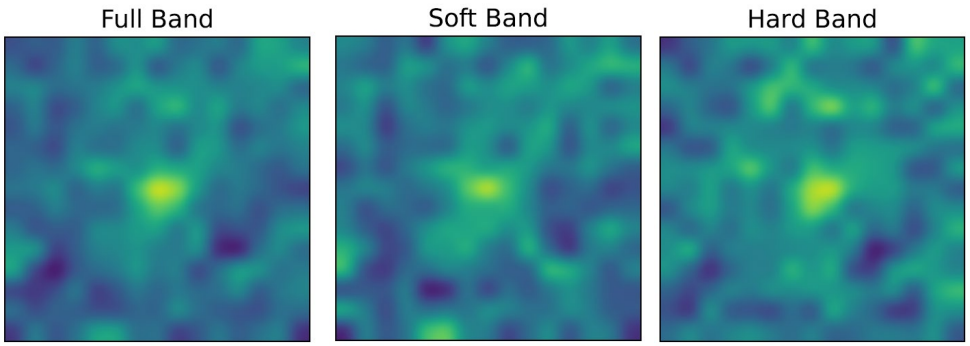
- Our DOGs occupy large ranges of L_X and N_H, and their SED classifications (galaxy vs. AGN) vary, suggesting their **heterogeneous nature**

Radio AGN identification

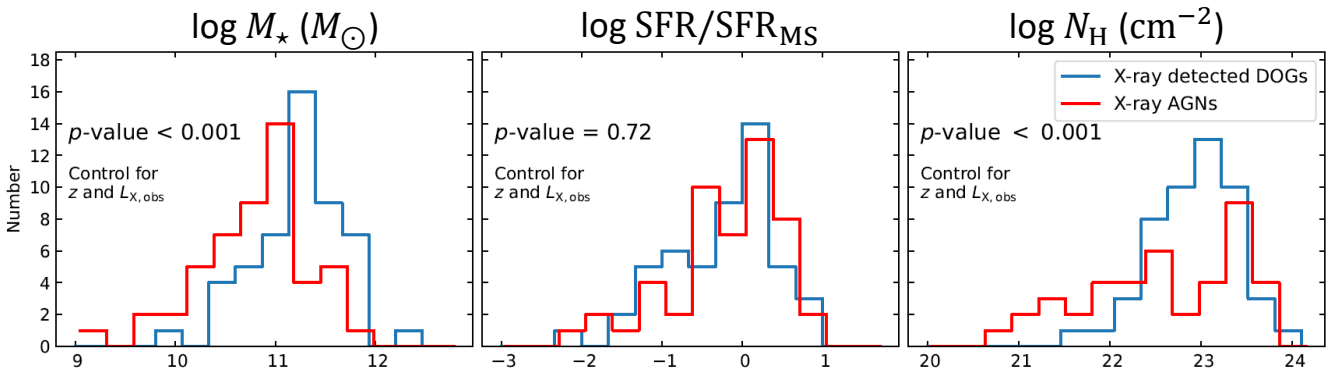


Takeaway: our results challenge the relevance of the merger-driven galaxy-SMBH coevolution framework for X-ray detected DOGs





- Combining the results for **X-ray detected DOGs** and **X-ray stacking** for those undetected in X-rays
- We find DOGs do not show distinctively **different SMBH accretion** than matched typical galaxies (AGN fraction $\approx 2-20\%$; Xue+2010, Aird+2018, Zou+2024)



Check our paper!
arXiv:2410.18190

- X-ray detected DOGs have **higher $M_\star$ and N_H** and **similar SFR/SFR$_{MS}$** compared with X-ray AGNs, and the results can be more naturally explained by **the AGN unification model**