

# Euclid KP-CL-5: Mass/Richness Covariance using ICM proxies

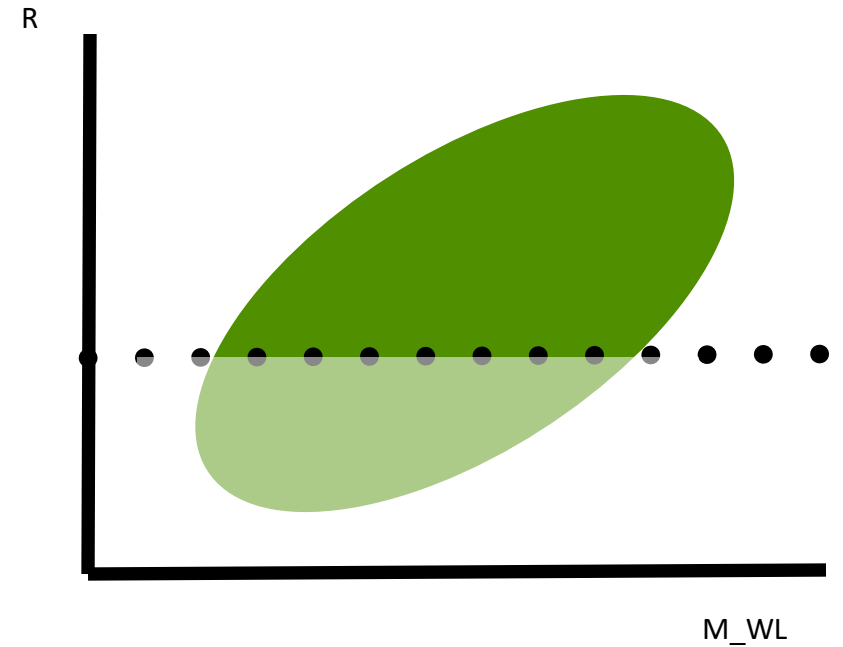
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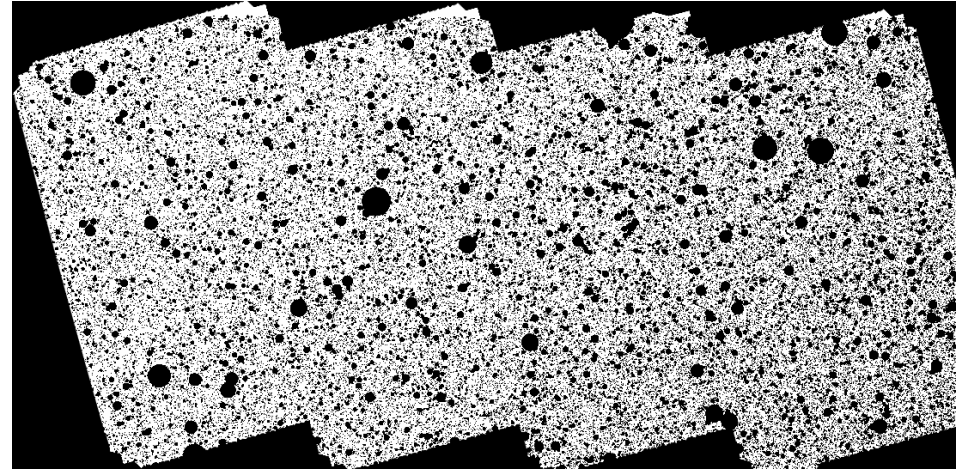
# Motivation

- Clusters selected on basis of “Euclid-richness” (R)
- Mass calibration from weak lensing is critical (M\_WL)
- If there is covariance between R and M\_WL then the mass calibration will be biased by a threshold on R
- Measure covariance between R and M\_WL using ICM mass proxies (e.g. T, M<sub>gas</sub>, Y<sub>x</sub>, L<sub>x</sub>)
- To capture full covariance, need sample with Euclidized R and M\_WL



# Catalogue matching

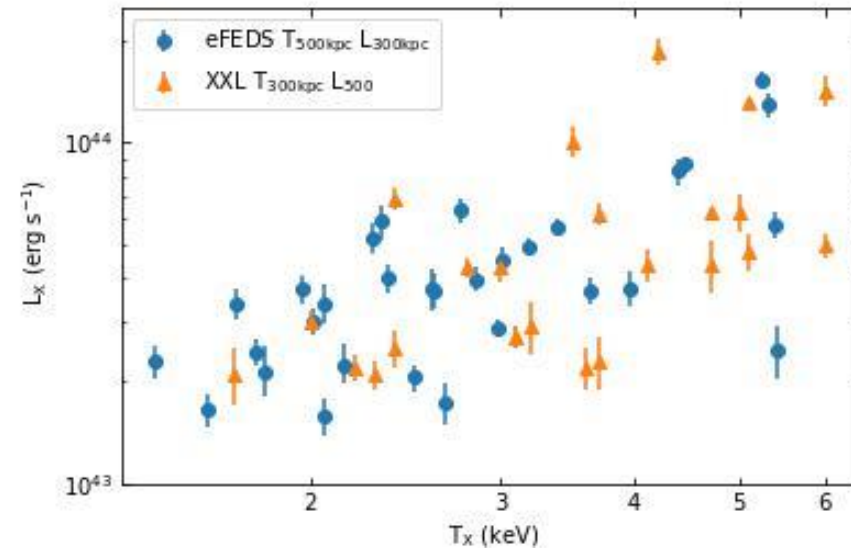
- AMICO and PzWAV catalogues from HSC data by Barbara Sartoris (WP3) – currently obtained using DR2
- X-ray clusters from XXL and eFEDS
- 84 X-ray clusters with  $M > 1e14$ ,  $Z < 0.6$ , and X-ray T
  - 79 (56) match with Amico (PzWAV) clusters
- However, approximately 1/3 of the area is affected by bright star masks
  - Impacts matching, and optical properties



Bright star mask applied to eFEDS field

# Future work

- Obtain Euclidized richness using RICH\_CL
  - In progress with pilot sample by Stefano Andreon
- Get AMICO / PzWAV catalogues for DR3 HSC data on eFEDS field.
- Run COMB\_CL to obtain weak-lensing masses
  - In progress with pilot sample by Lucie Baumont
- Measure covariance – code in progress



Pilot sample of 55 X-Ray selected clusters located in a conservative HSC DR2 footprint with  $M > 1e14$ ,  $Z < 0.6$ , and X-ray T.