Stacked Weak Lensing with Redmapper Clusters in Early DES Data

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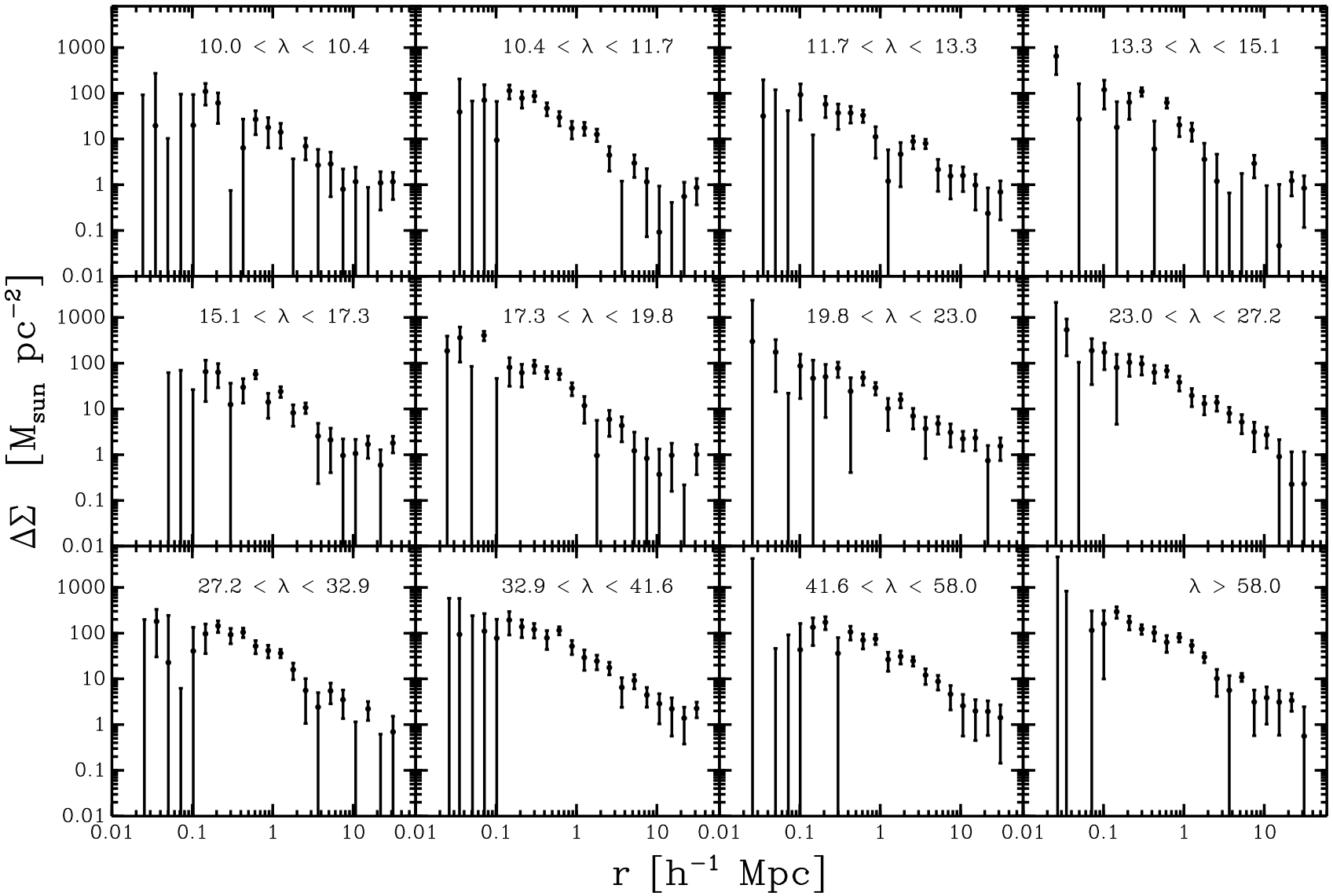
Outline

- Motivation to stack clusters
- Results from
- https://cdcvs.fnal.gov/redmine/projects/des-clusters/wiki/WL_with_RedMapper_in_Early_DES_Data
- JBOP (Just a Bunch of Plots)

Stacked Signal for RedMapper Clusters



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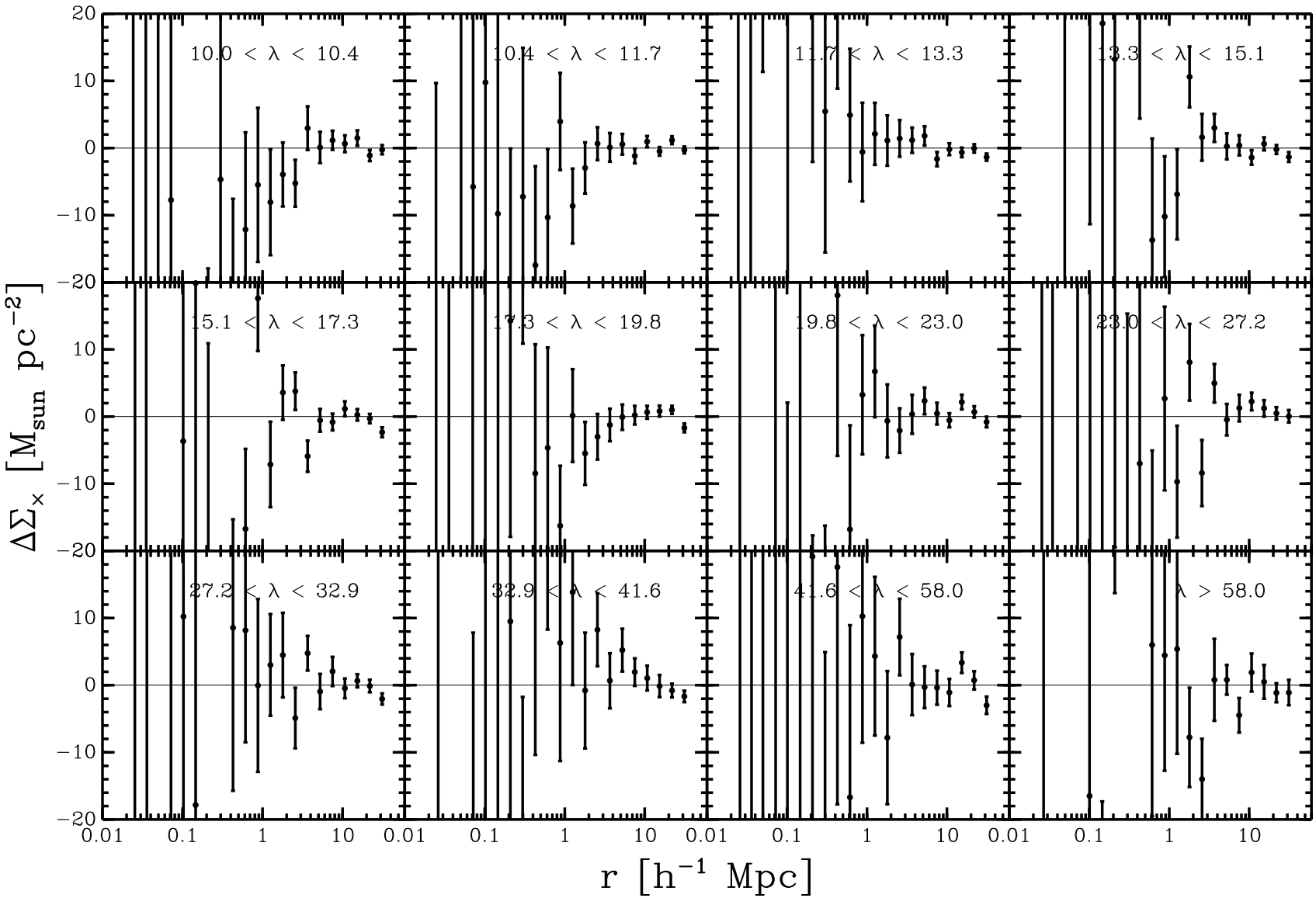
Stacked Signal for RedMapper Clusters: B mode



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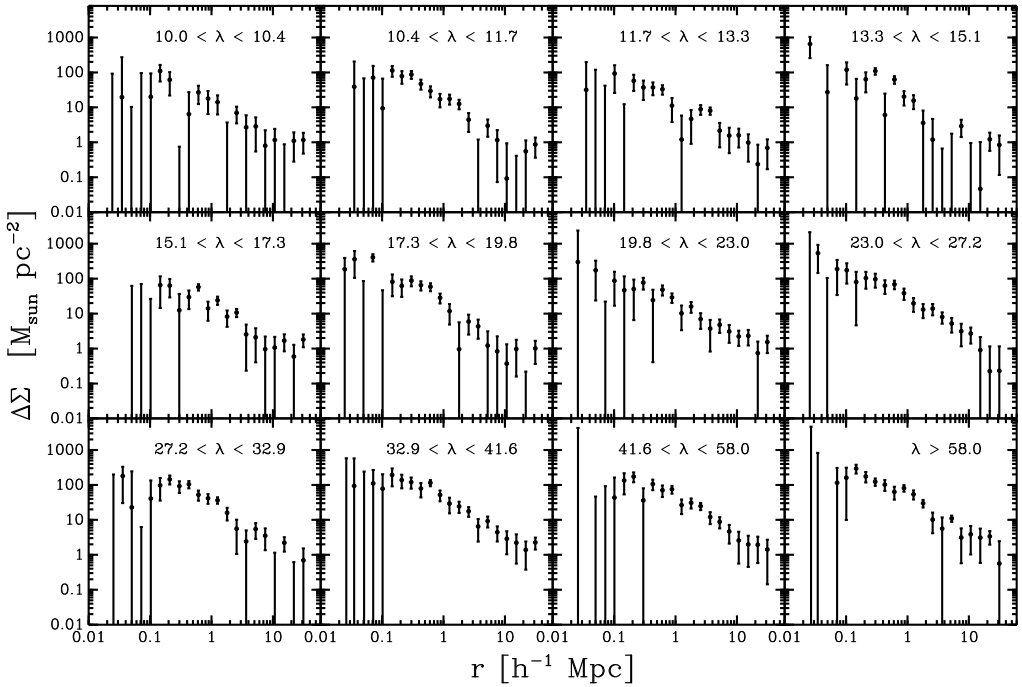
Stacked Signal for RedMapper Clusters

- Im3Shape catalog v4 with suggested cuts
- No boost corrections yet applied
- Mis-centering not accounted for.
- Potential photometry problems in crowded fields.



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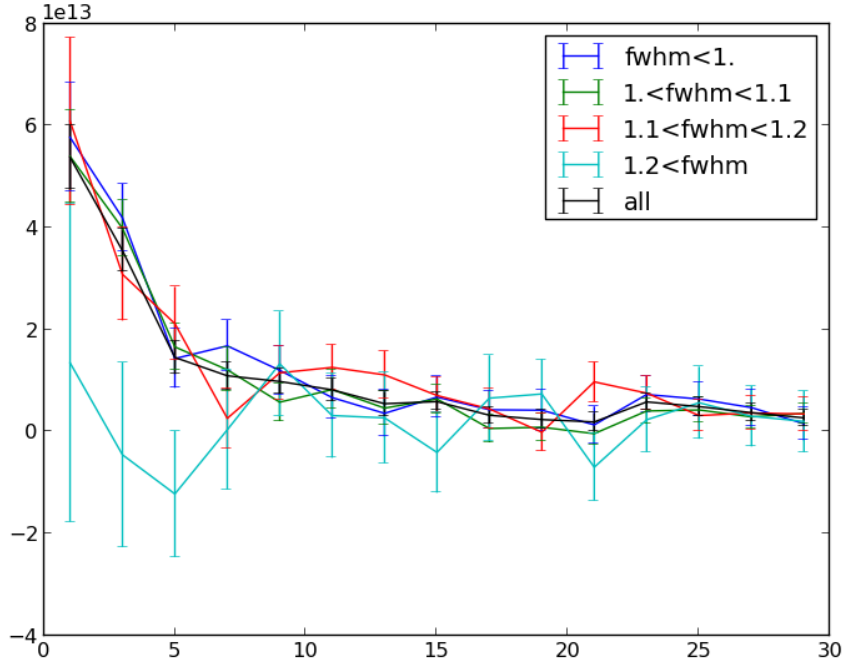
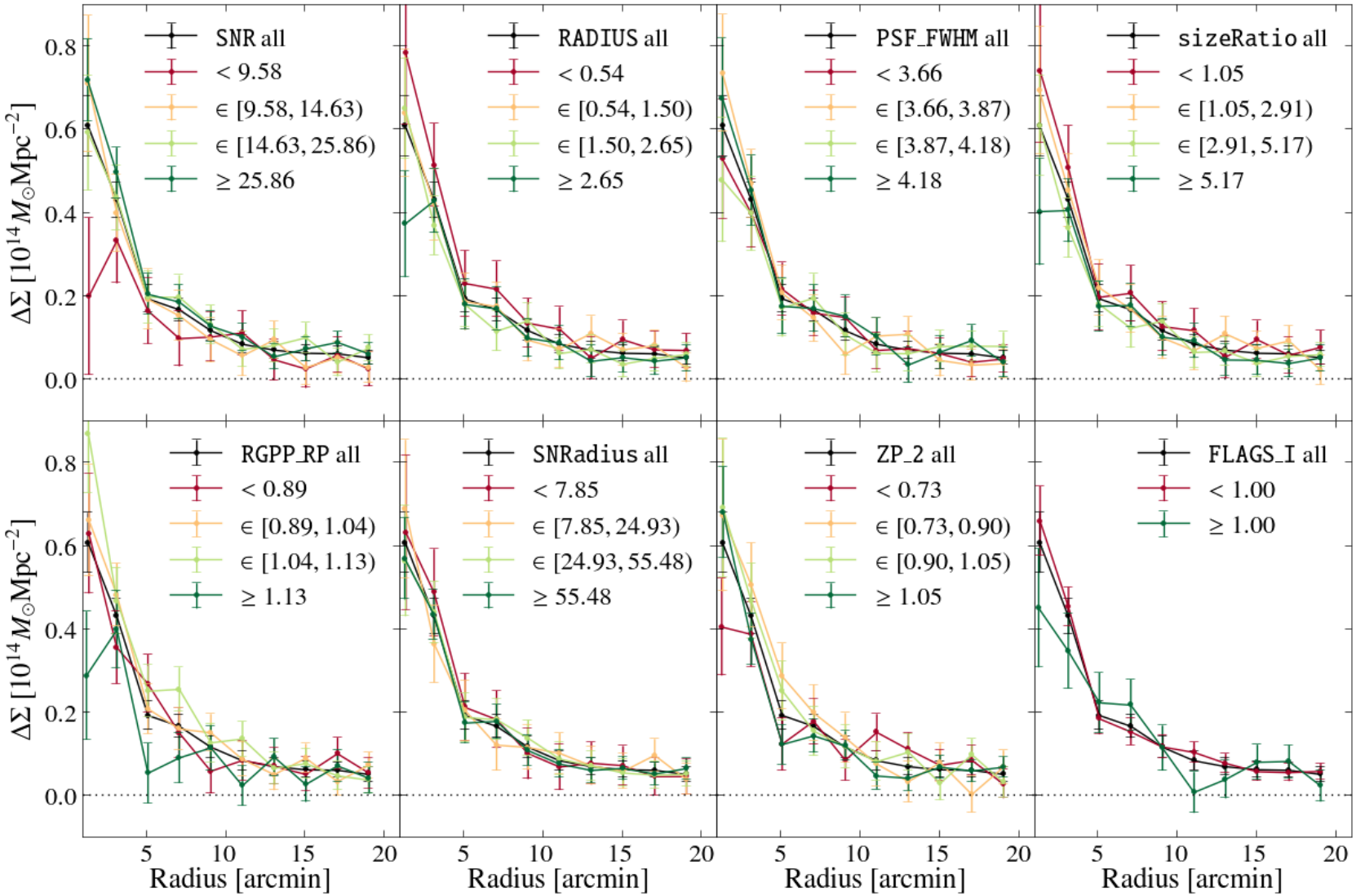
Dominik's Shape Consistency Tests

- Larger galaxies have larger detected shear.
- Partly related to definition of size



Dominik Gangkofner

Peter's Consistency Tests



Peter Melchior

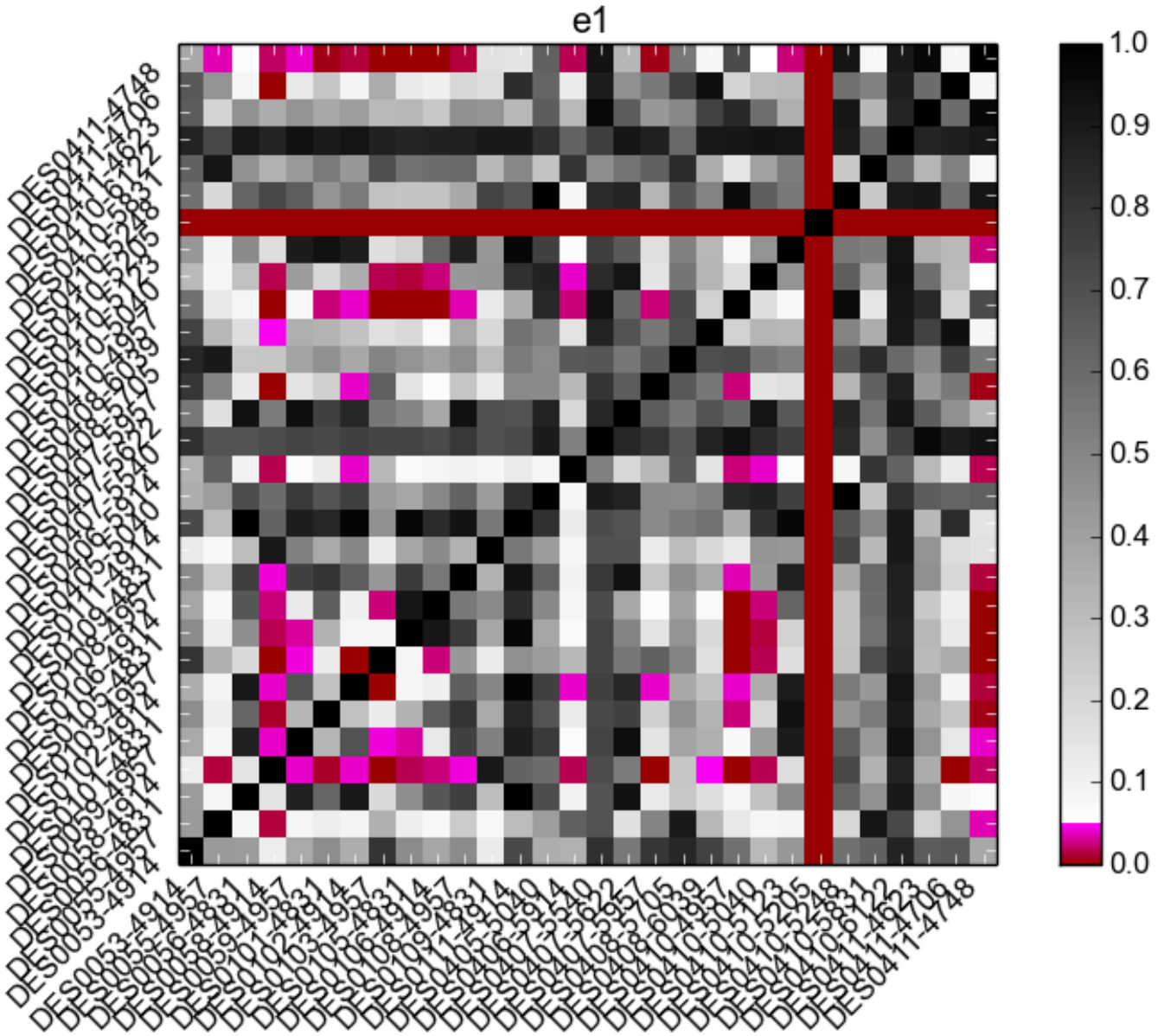
Peter's Consistency Tests

- There is a clear dependence on SNR. No noise bias correction applied.
- Galaxies with smaller RADIUS (deconvolved half-light radius) are more strongly lensed, in particular at larger separation from the cluster centers.
- Blending (FLAGS=1) does matter a lot towards cluster centers. This was also seen in the pointed SV clusters. This FLAG==0 cut needs to be applied for any lens sample that is associated with a higher concentration of galaxies.
- flag==0 cut does introduce a density-dependent bias: see this paper

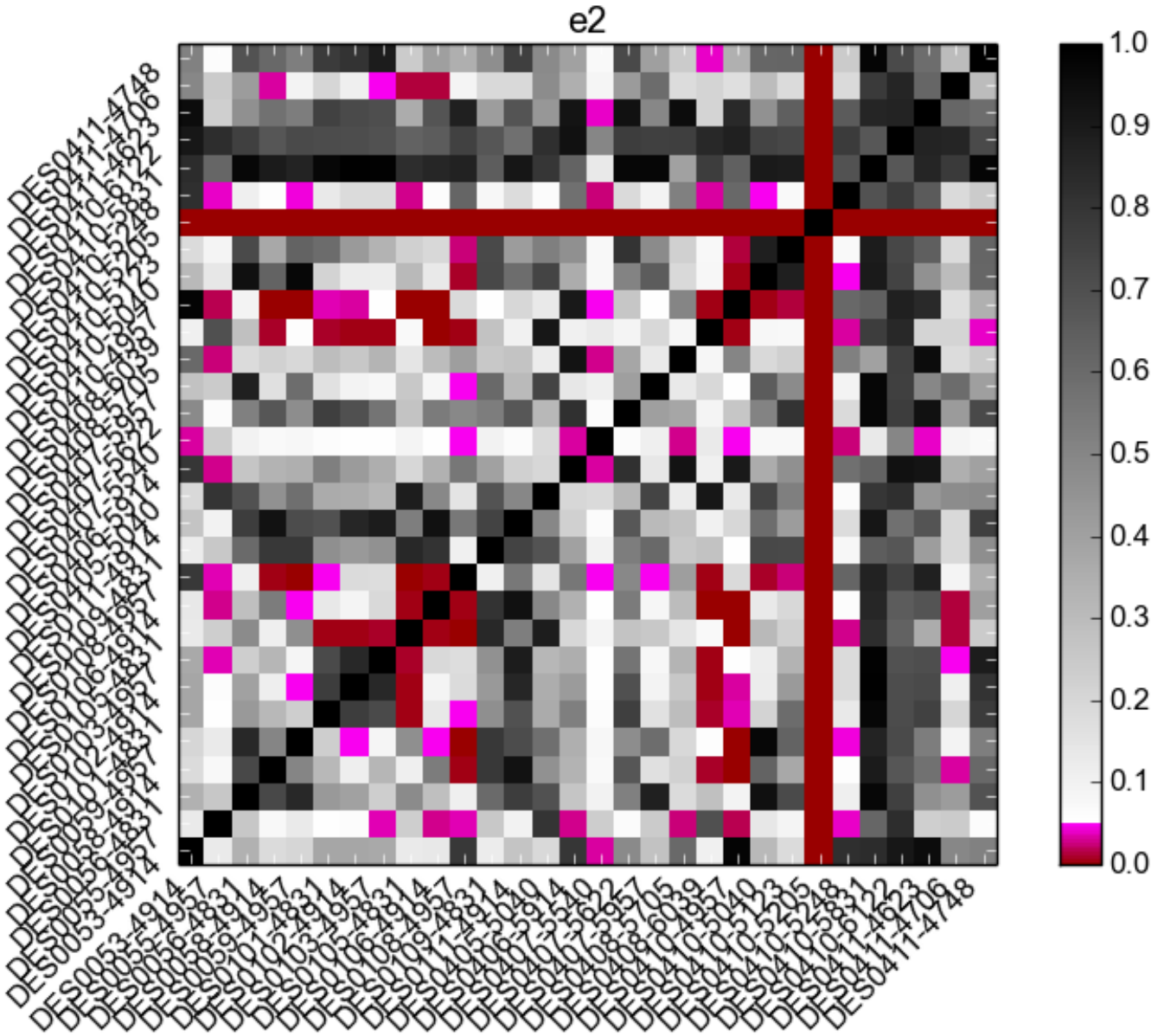
Jeorg's Coadd Tile Consistency Tests

- Check that the shear catalog properties of different DES tiles are consistent.
- Computing the KS test for several galaxy properties.

Jeorg's Coadd Tile Consistency Tests



Jeorg's Coadd Tile Consistency Tests



Jeorg's Coadd Tile Consistency Tests