DC4 analysis

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Dark Energy Survey
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DES Data Management download page of images:

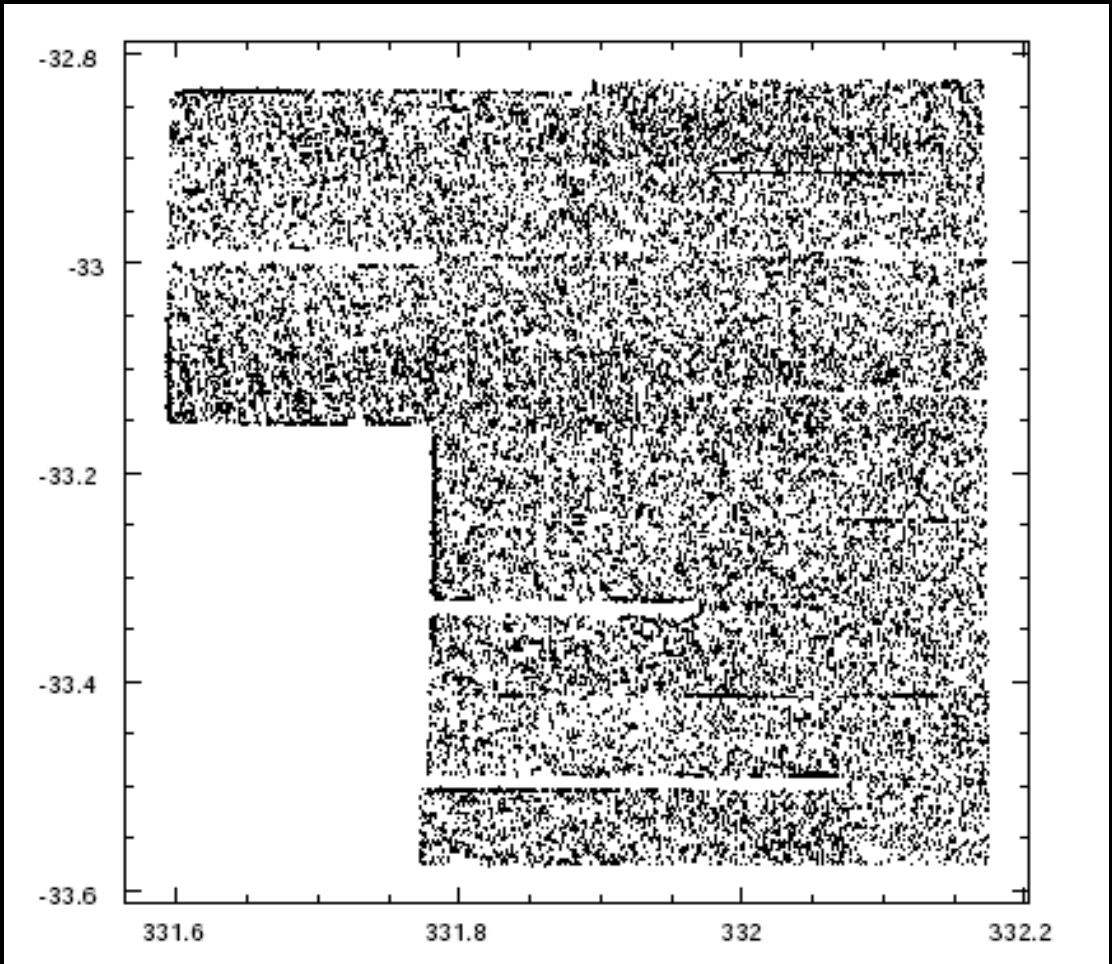
https://desar.cosmology.uiuc.edu/archive/

input catalog (Michael Busha + Risa wechsler): Hubble Volume + galaxies

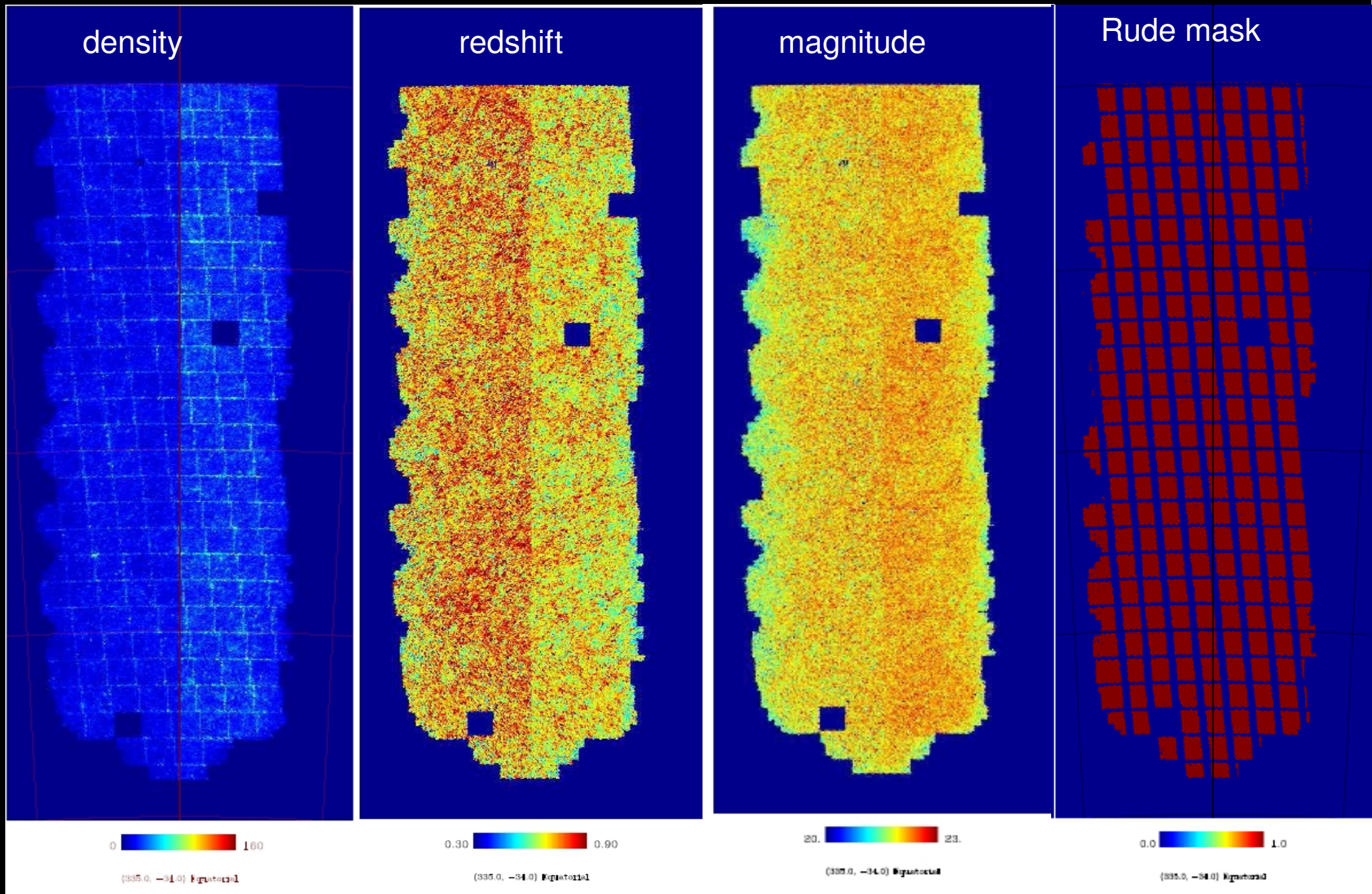
http://www.slac.stanford.edu/~mbusha/mocks/catalogs.html

We take a version of the images by Huan Lin which matches the input catalog with the output images made with SExtractor

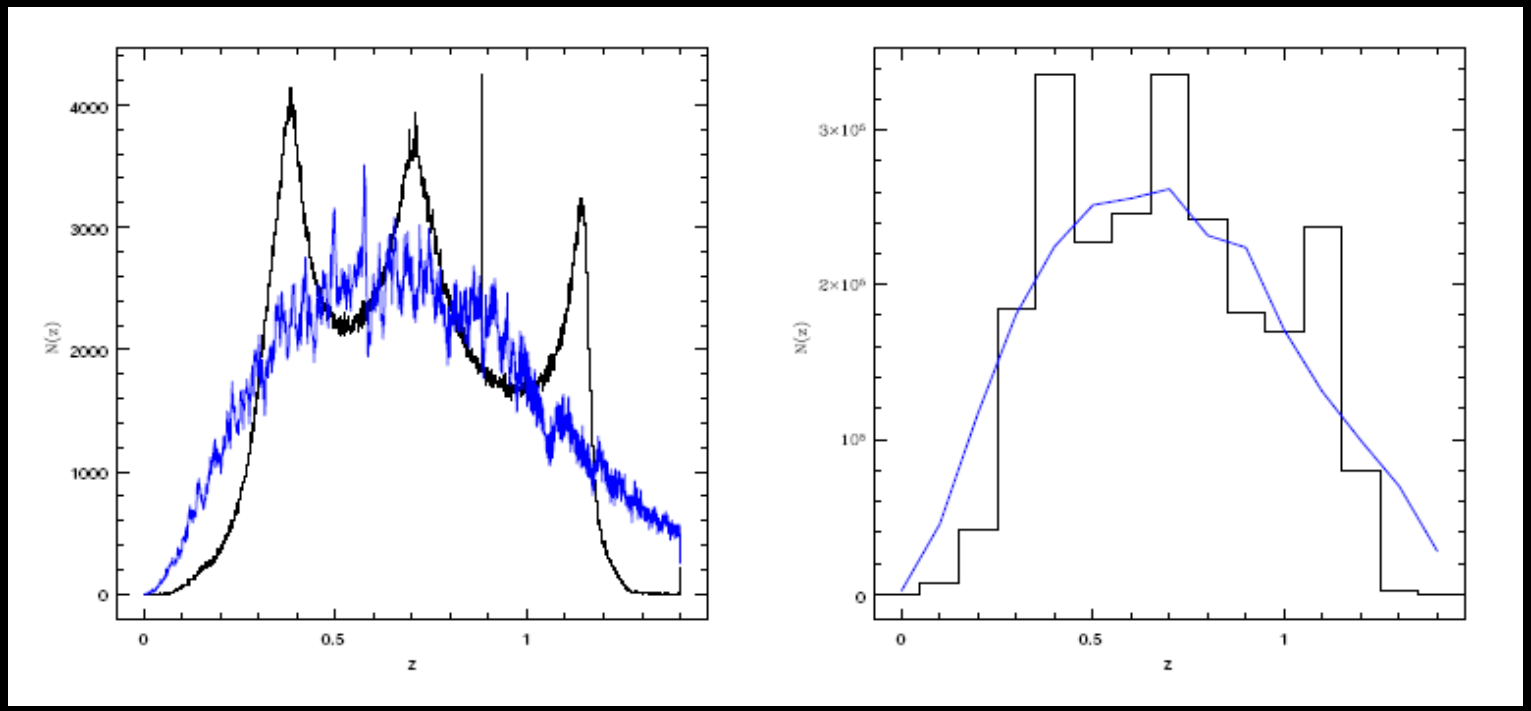
It seems that a good fraction of the objects in the catalog are on the boundaries of the CCDs



After matching only true galaxies, we find that the resulting galaxy distribution clearly shows the structure of the co-add tiles (virtual squares patches of 0.75×0.75 deg used to co-add images).



Distribution of redshift (true and photoz). Strange shape, colors problem?



Histogram of photoz-truez is a lorentzian, implications?
Should we use pdf distribution of photoz instead of mean photoz to study the LSS?

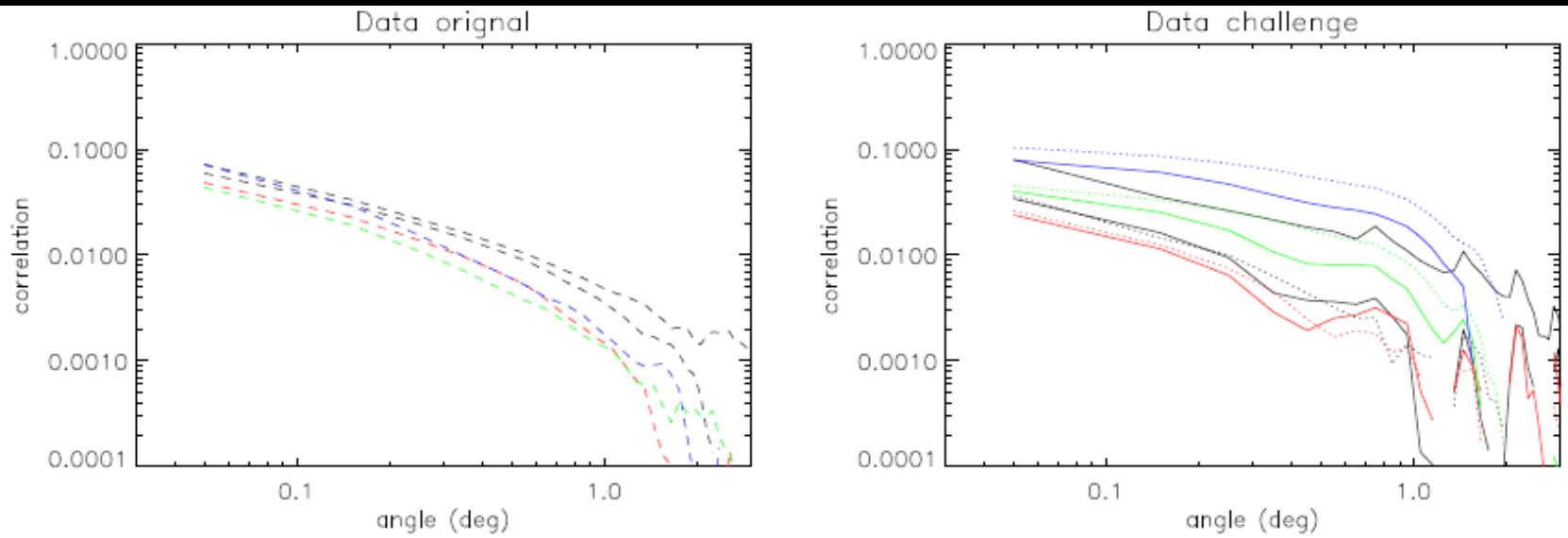


Figure 6: Comparison of the galaxy angular 2-point correlation function in the input catalog (left panel) and the DC4 data (right), using the mask in Fig.4. In both cases colors correspond to different (true) i-band magnitudes: i=23-24 (blue), 22-23 (green), 21-22 (red), 20-21 (black) and $i < 20$ (thick black). On the right panel, solid (dotted) lines correspond to $RA < 335$ ($RA > 335$).

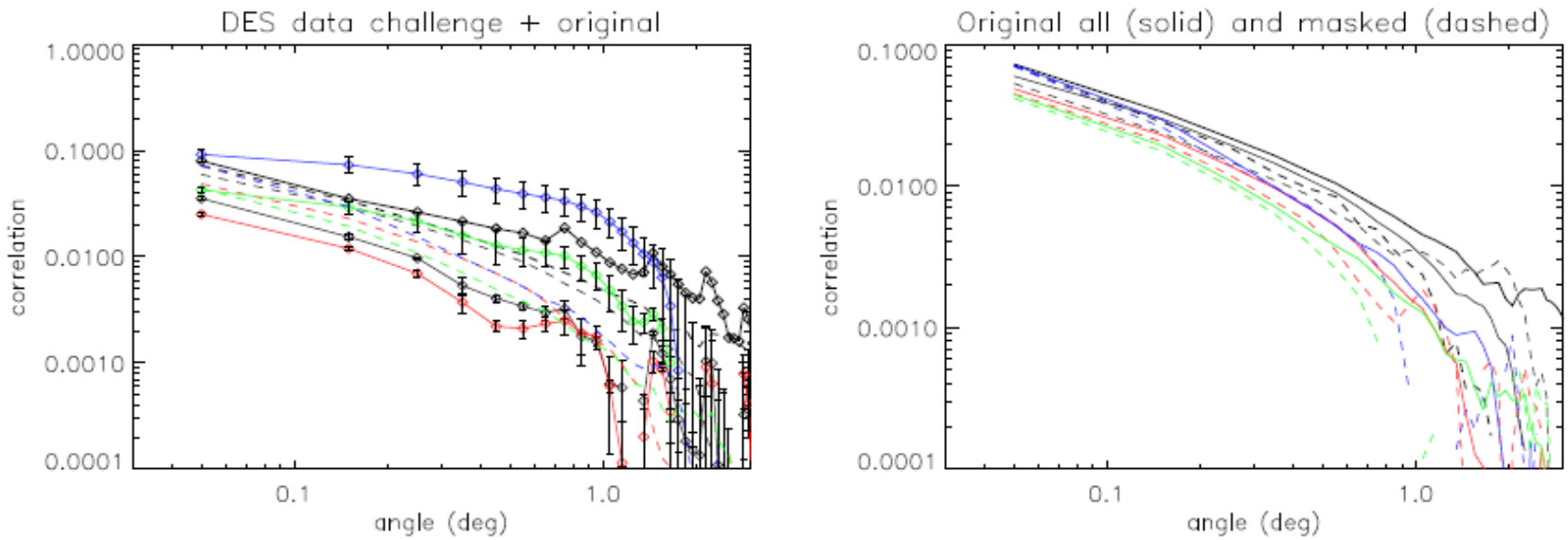


Figure 7: Left panel compares the clustering in the input catalog (dashed lines), ie same as left panel in Fig.6), to the mean correlation in the DC4 galaxies. Here symbols is the mean of $RA < 335$ and $RA > 335$ and errorbars correspond to the difference, indicating the level of sampling variance. Right panel shows the effect of sampling a smaller masked sub-area (dashed lines) within the input catalog (ie no DC4 objects) as compare to the full input galaxy catalog (solid lines), which is about 8 times larger.

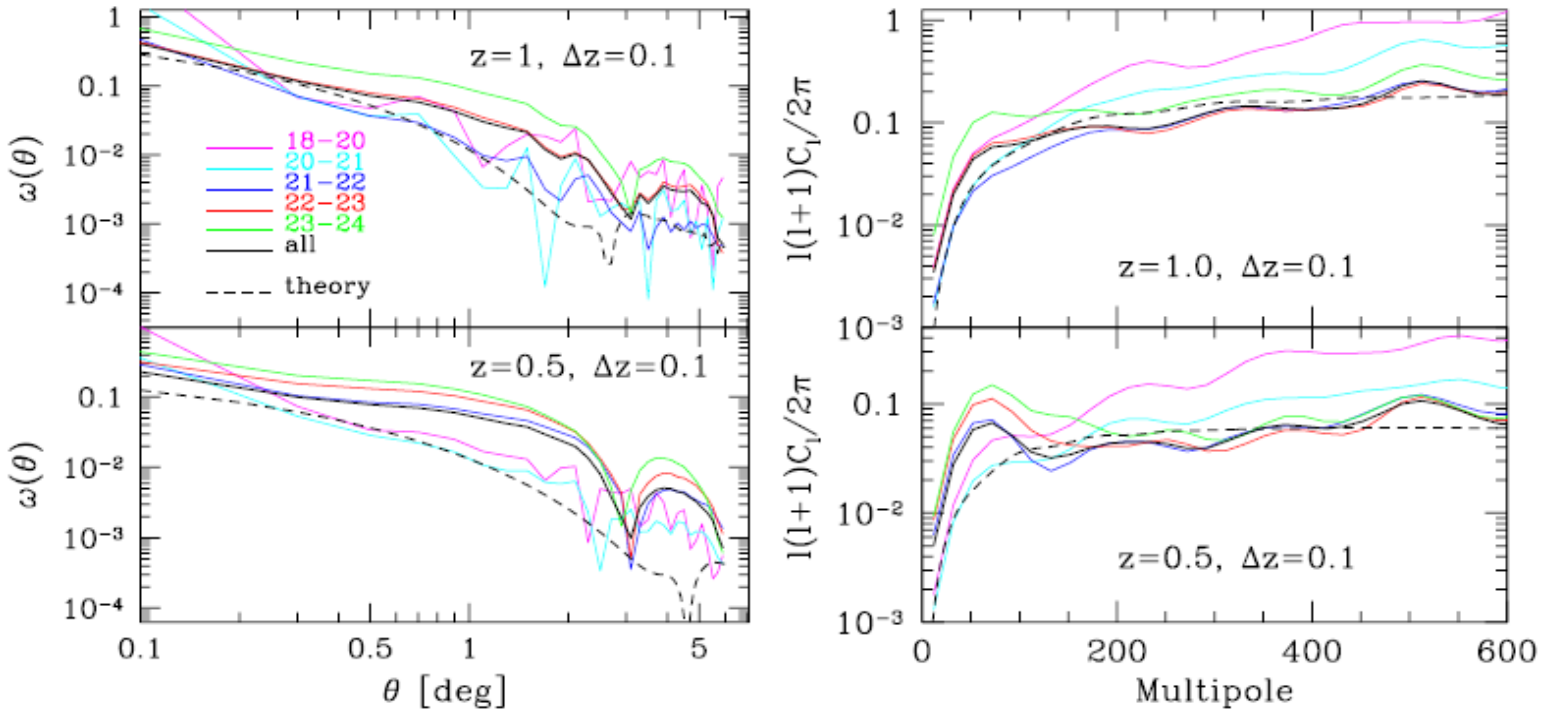


Figure 8: Left (right) panel compares the clustering in the the 2-point correlation (angular power spectrum) for two different redshift bins and different magnitude bins ("All" means $18 < i < 24$).

WHAT TO DO NEXT

download webpage with more possible queries

new matching between input catalog and images.
We want to distinguish problems coming from DC4
or from the images

include new mask (Molly Swanson)

Use MICE simulations also to try another approach