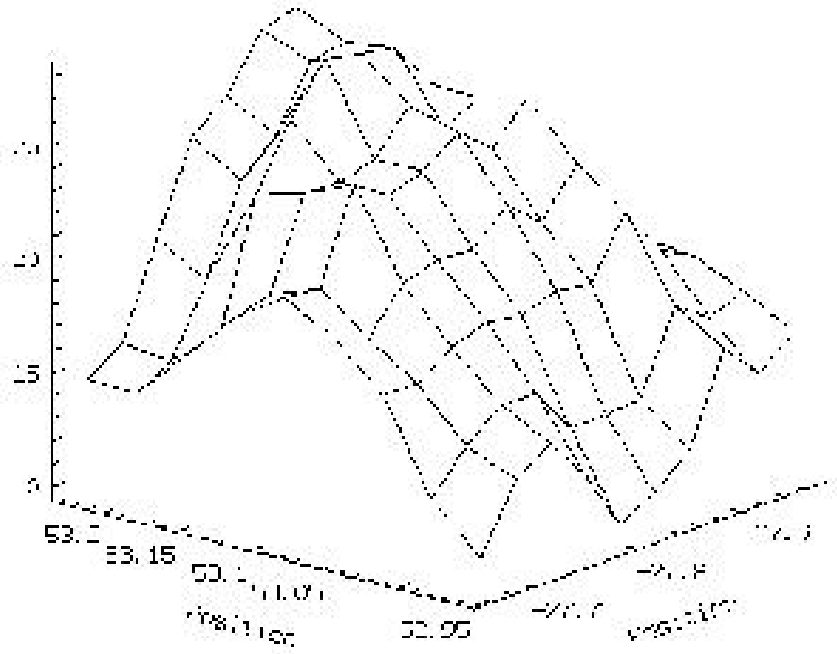
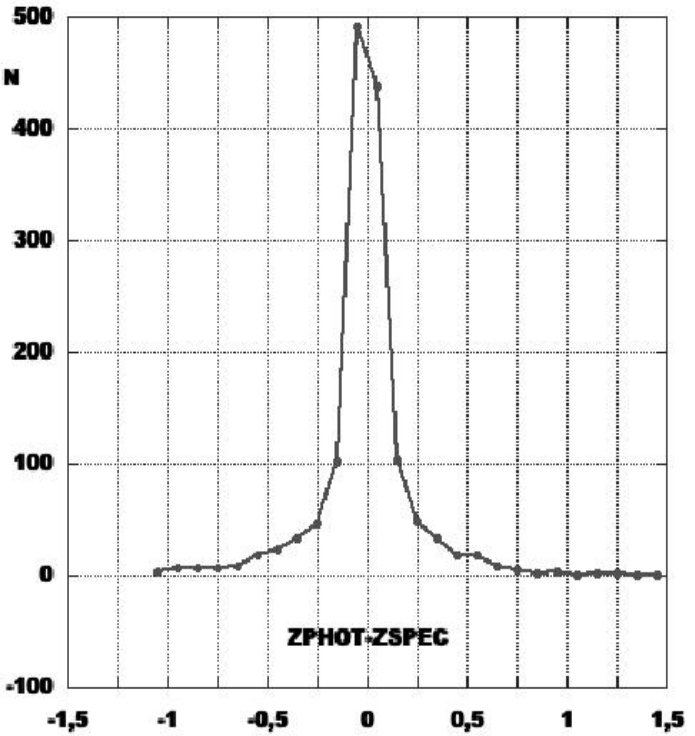
# Detections of structures in the VVDS-2H: friend-of-friend-like and zphot methods

# Example: CDFS

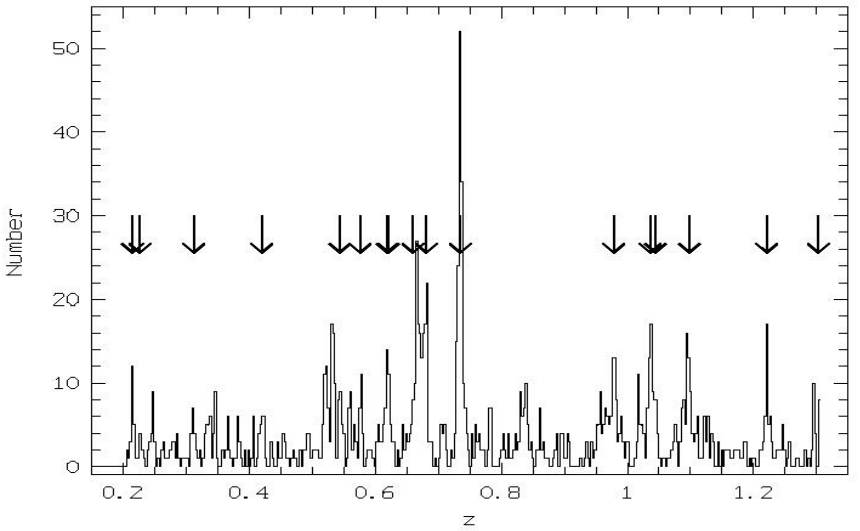
- spectro: ~0.12 deg2, sampling: ~[10-30]%
- zphot: ok up to z~1.5

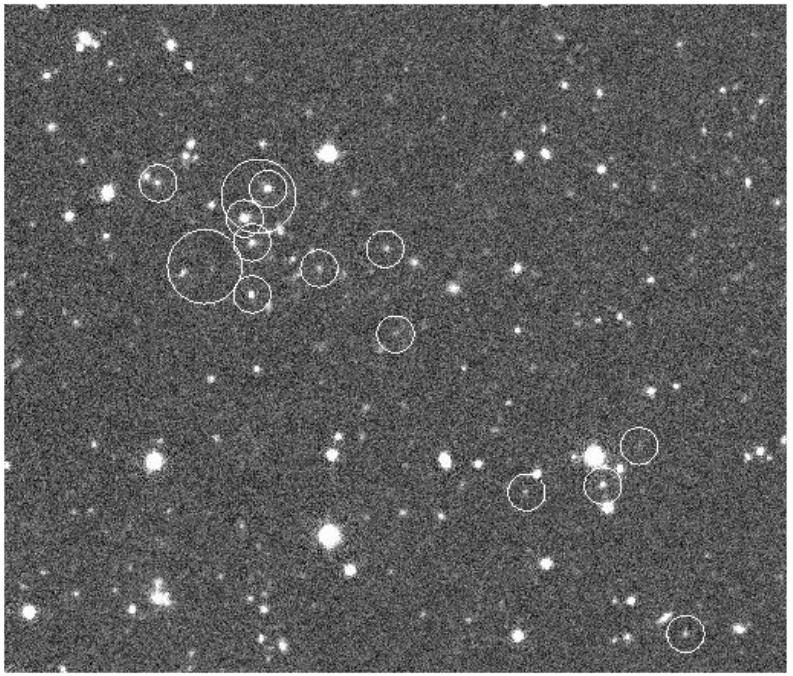


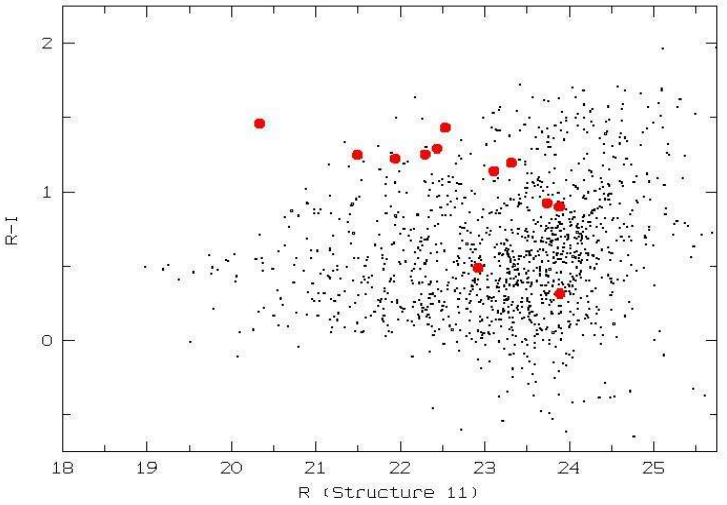


- Combination of:
  - spectroscopic 3D direct detections
  - 2D detections (density maps) increasing contrast using zphot
  - correlation with colors (search for old populations)
  - correlation with morph types (search for old populations)
  - correlation with X-ray data (search for X-ray thermal emission)

- detection of ~20 structures, including:
  - 2 walls at z=0.66 and z=0.73 (including a massive group)
  - the highest known (?) group of galaxies (z=1.098)

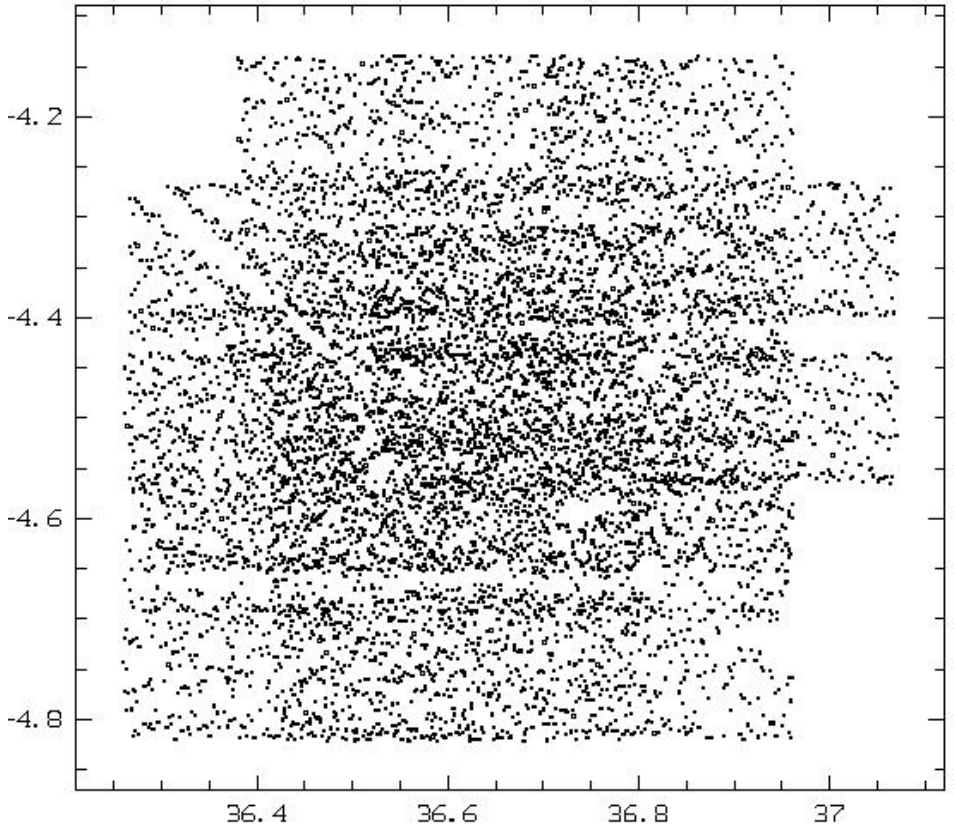


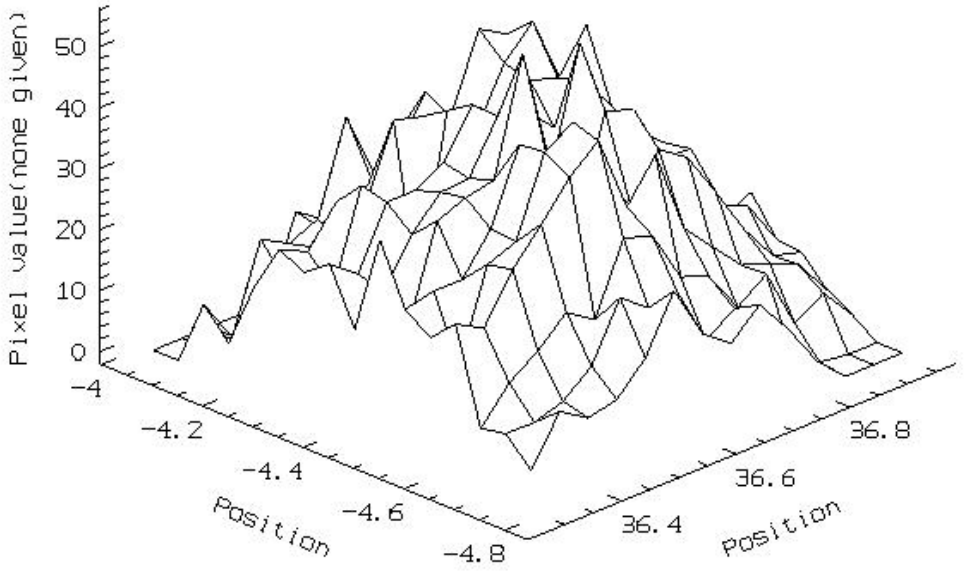





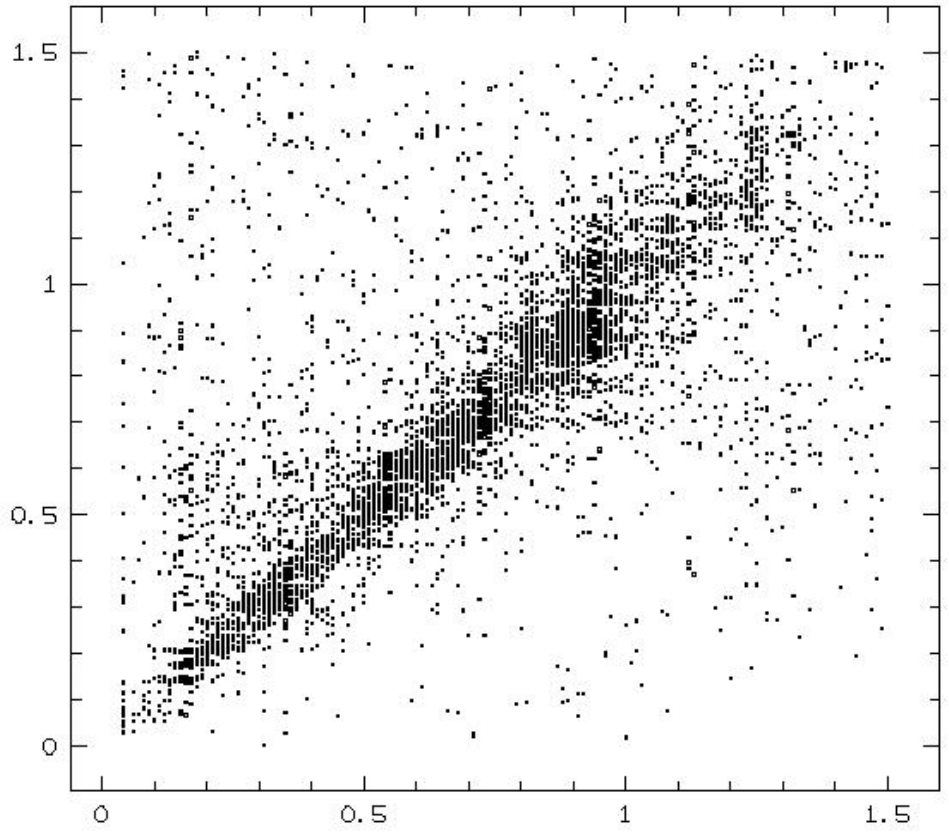
# Applying same methods to the VVDS-2H

## Spectro: (~0.45 deg2, sampling: [10-50]%)



# Zphot: ok at least in ~[0.1;1.5]

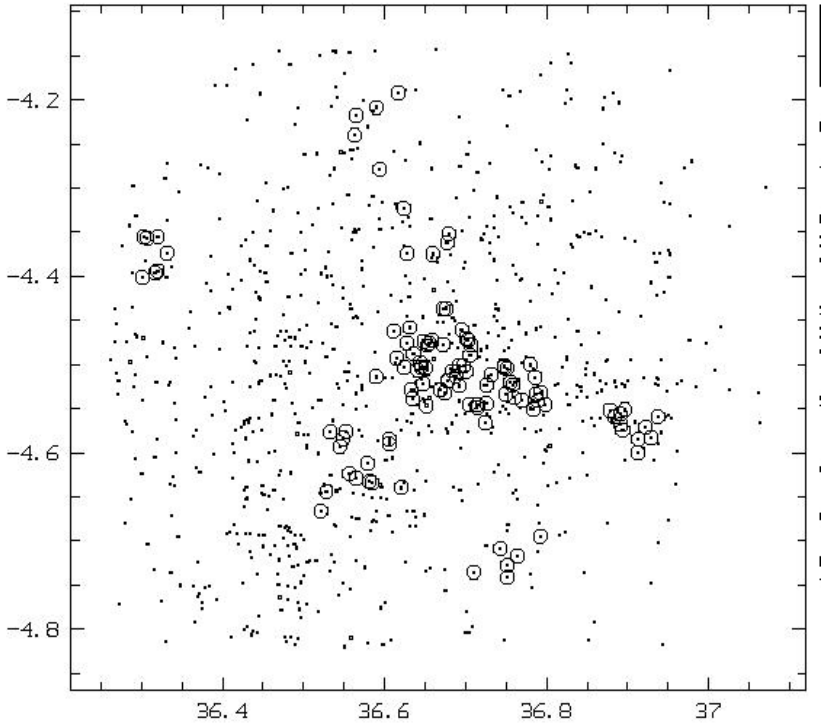


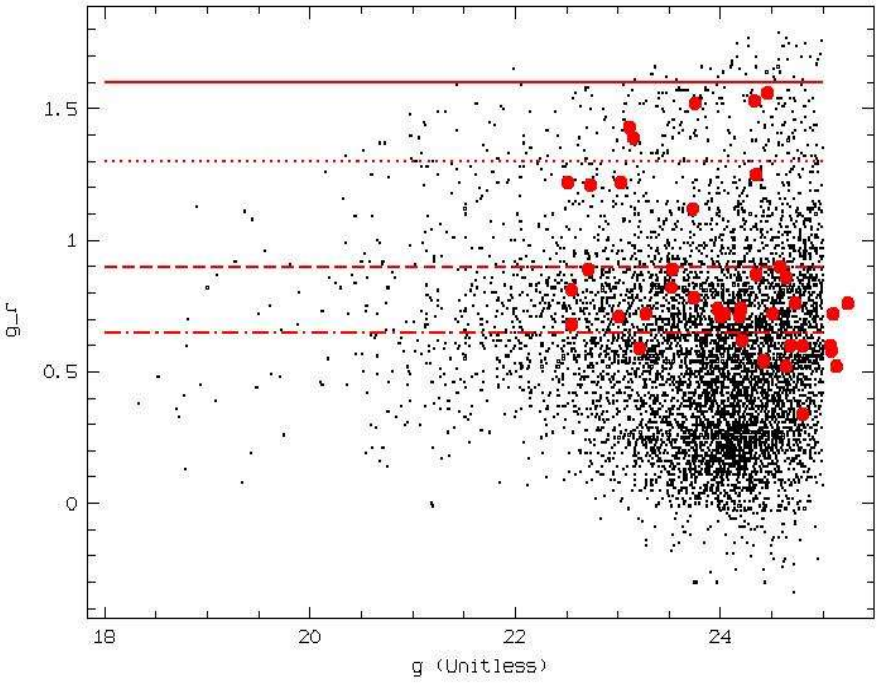
# First results

- Spectro: 56 structures ([0.17;1.47]), sometimes grouped in large structures (1 supercluster + 4 dense areas?). Diffuse structures most of the time
- Zphot: Several significant galaxy overdensities, matching the spectro detections in the redshift high sampling regions
- Lack of significant structures in the spectro catalog (due to inhomogeneous sampling or different structure classes)

# Zoom on: supercluster/filament node at z=0.63?

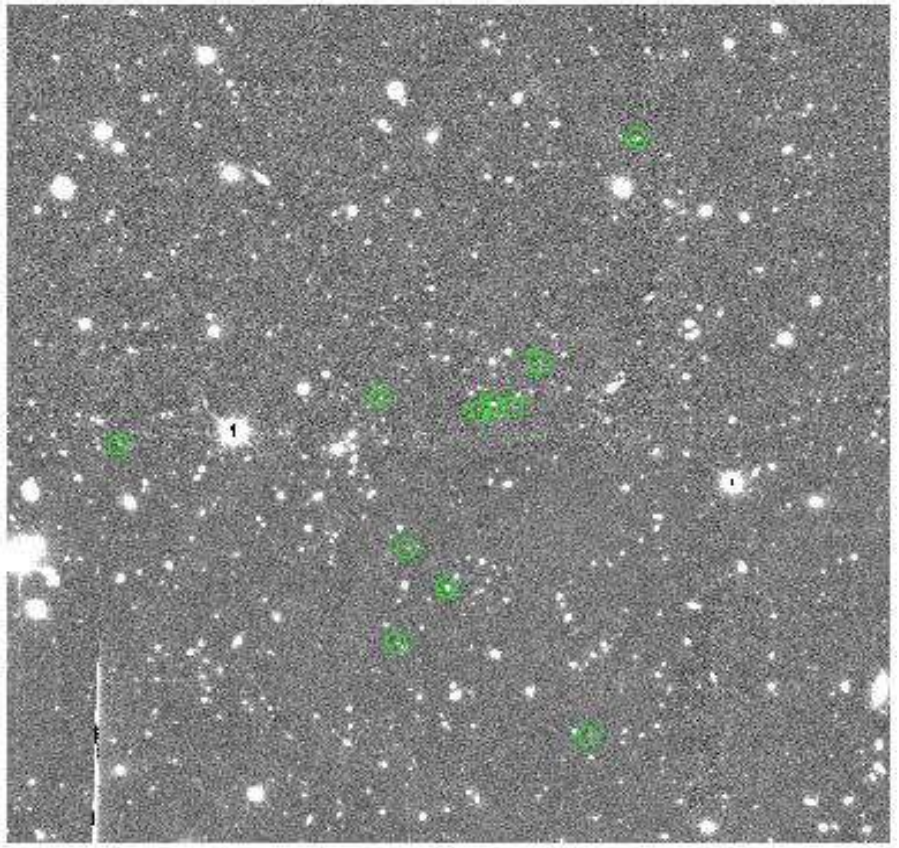
- 5 very close independent structures
- No clear red sequence

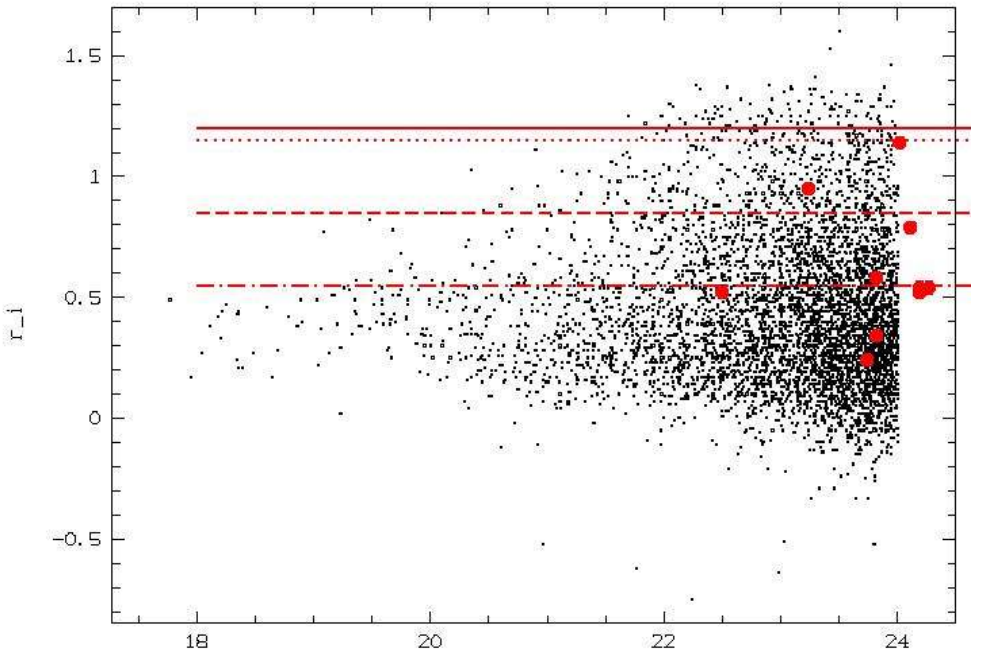


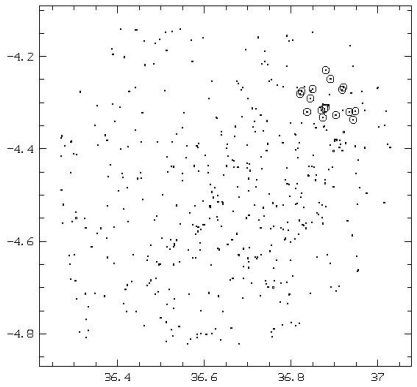
# Zoom on: group at z=1.02

- No visible red sequence

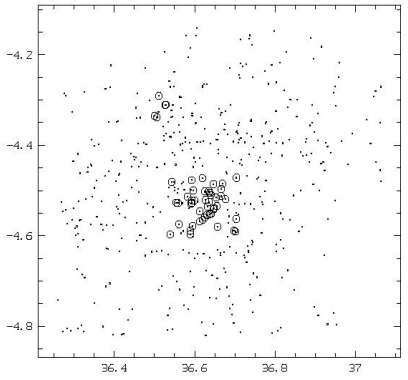




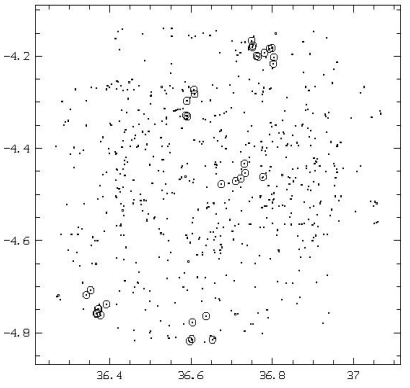
- 0.3-0.4



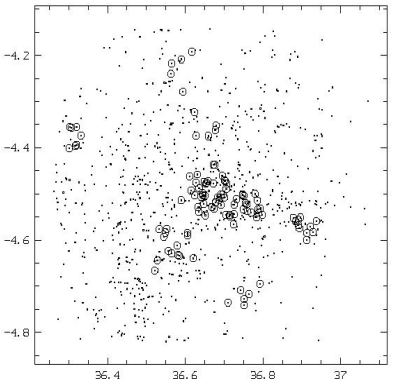

- 0.4-0.5



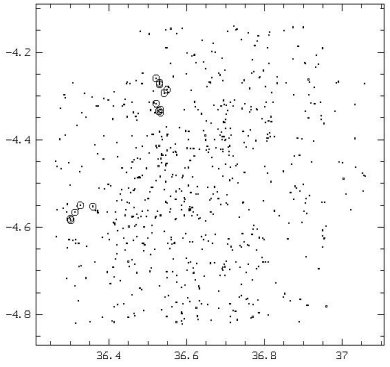

- 0.5-0.6



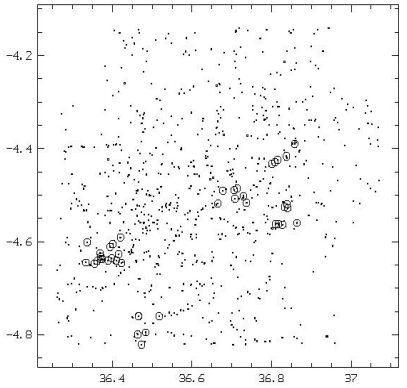

- 0.6-0.7



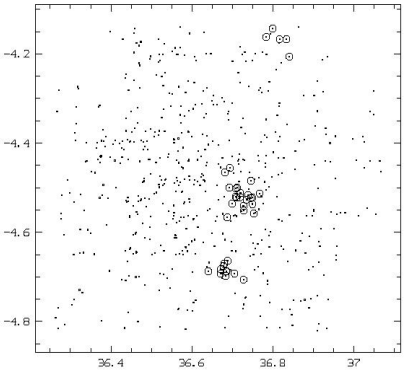

- 0.7-0.8



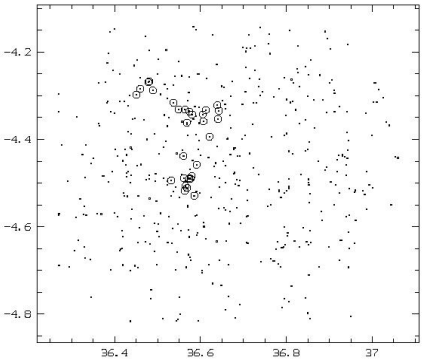

- 0.8-0.9



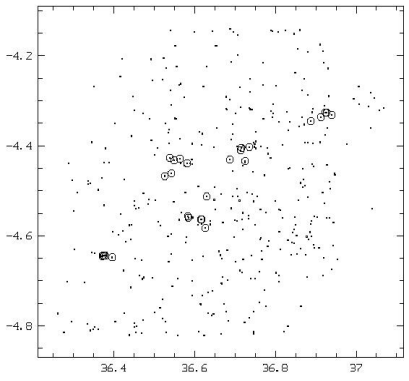

- 0.9-1.0



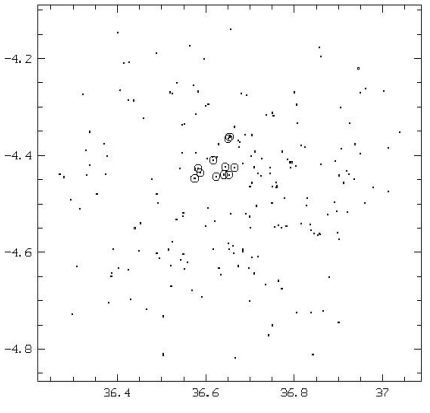

- 1.0-1.1



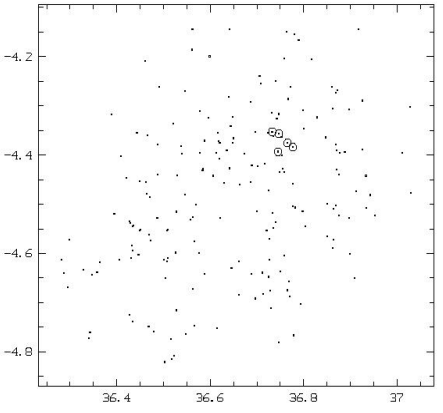

- 1.1-1.2



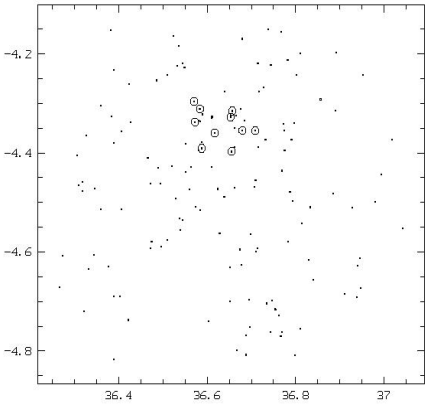

- 1.2-1.3

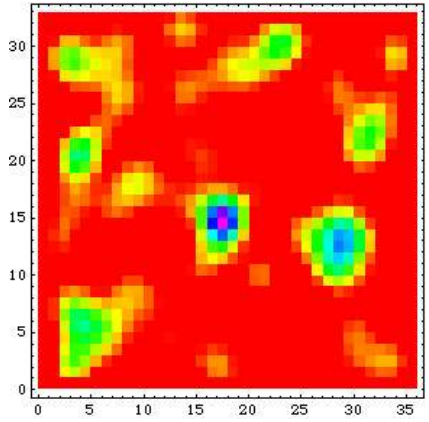


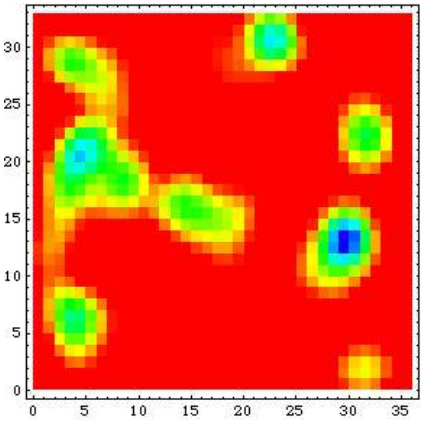

- 1.3-1.4



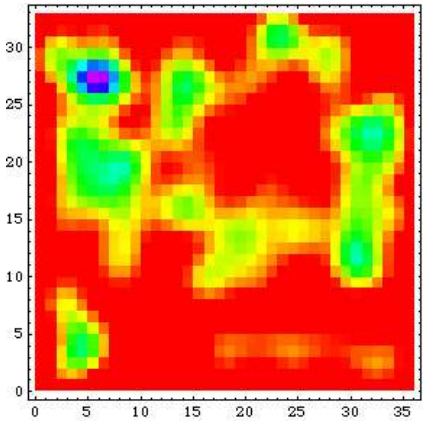

- 1.4-1.5

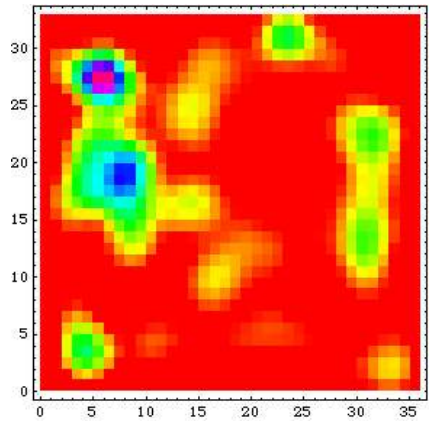




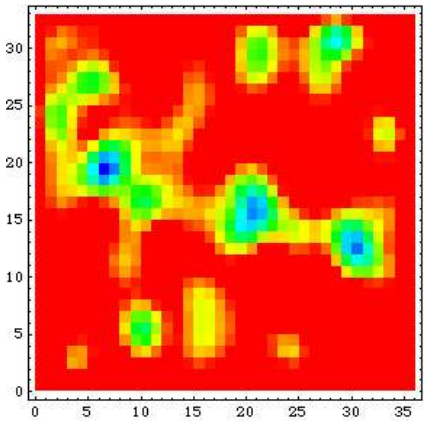


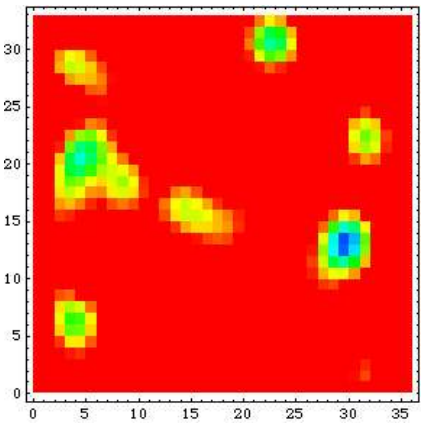
- 0.25-0.45 (all/red)



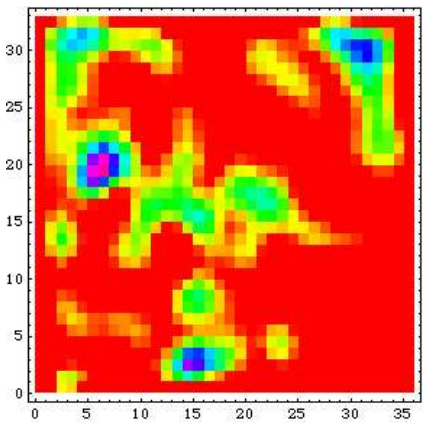


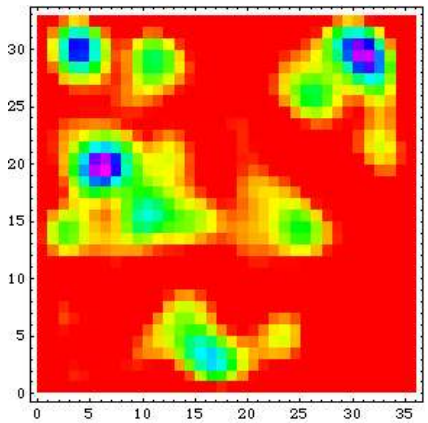
- 0.40-0.60 (all/red)



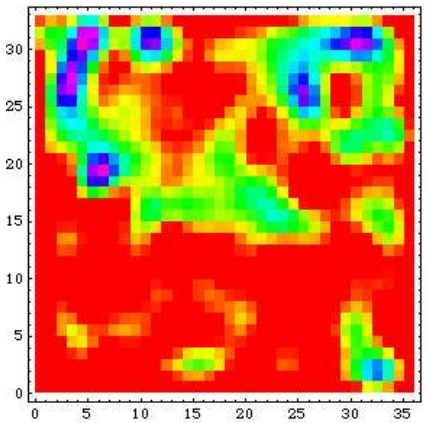


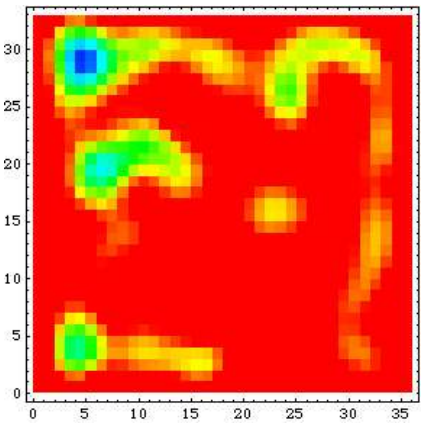
- 0.55-0.75 (all/red)





- 0.70-0.90 (all/red)





- 0.85-1.05 (all/red)

# To do!

- Search systematically for red sequences in the Spectro detections
- Compare systematically between Zphot and Spectro (Spectro detects compact structures, Zphot detect rich and/or red galaxy structures)
- Compare with other optical detection algorithms
- Compare with X-rays (extended or not if high z)
- ...