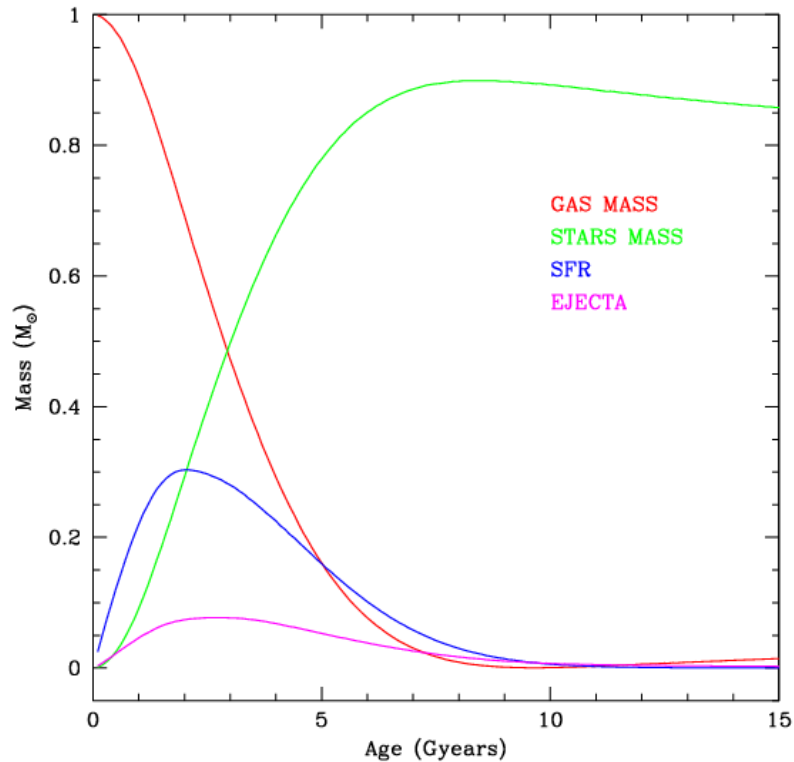


REST-FRAME COLORS BIMODALITY IN VVDS GALAXIES

THE METHOD



GRID OF TEMPLATES

Reduced χ^2 computation

$$\bar{\chi}^2 = \frac{1}{d} \sum_{i=1}^N \left(\frac{F_{i,obs} - F_{i,sim}}{\sigma_i} \right)^2$$

Best χ^2 model

- Model parameters => Galaxy parameters
- Model \times Normalization factor => SED => Absolute rest frame magnitude
Absolute rest frame colors
- Model stellar mass \times Normalization factor = Galaxy stellar mass

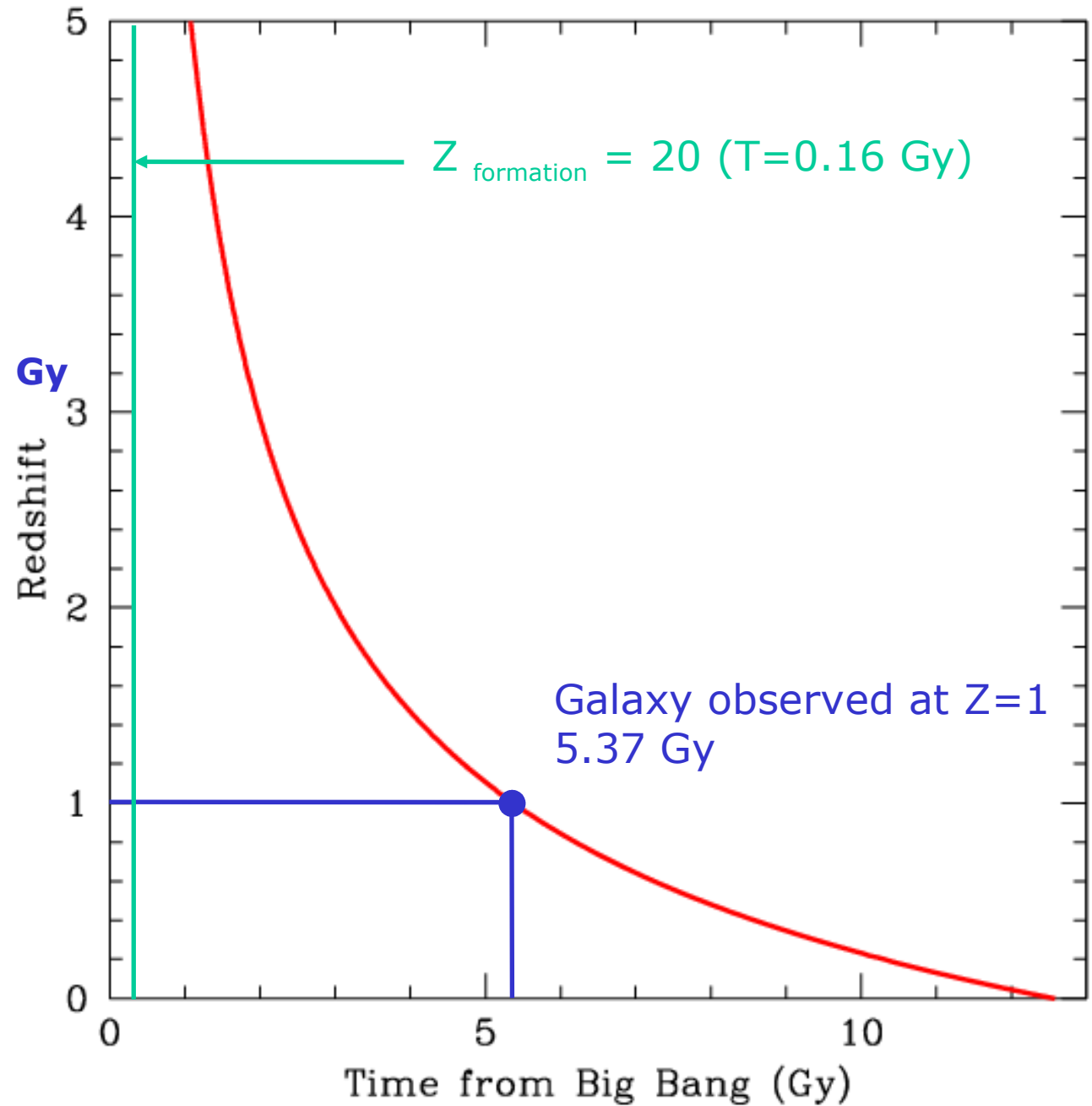
THE METHOD

1 **BestFit** approach

All ages up to 5.37 Gy

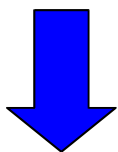
2 **FixedAge** approach

Age = 5.37 - 0.16 = 5.21 Gy



FIRST SAMPLE

- High continuum intensity
- High signal to noise
- Low photometric errors on magnitudes



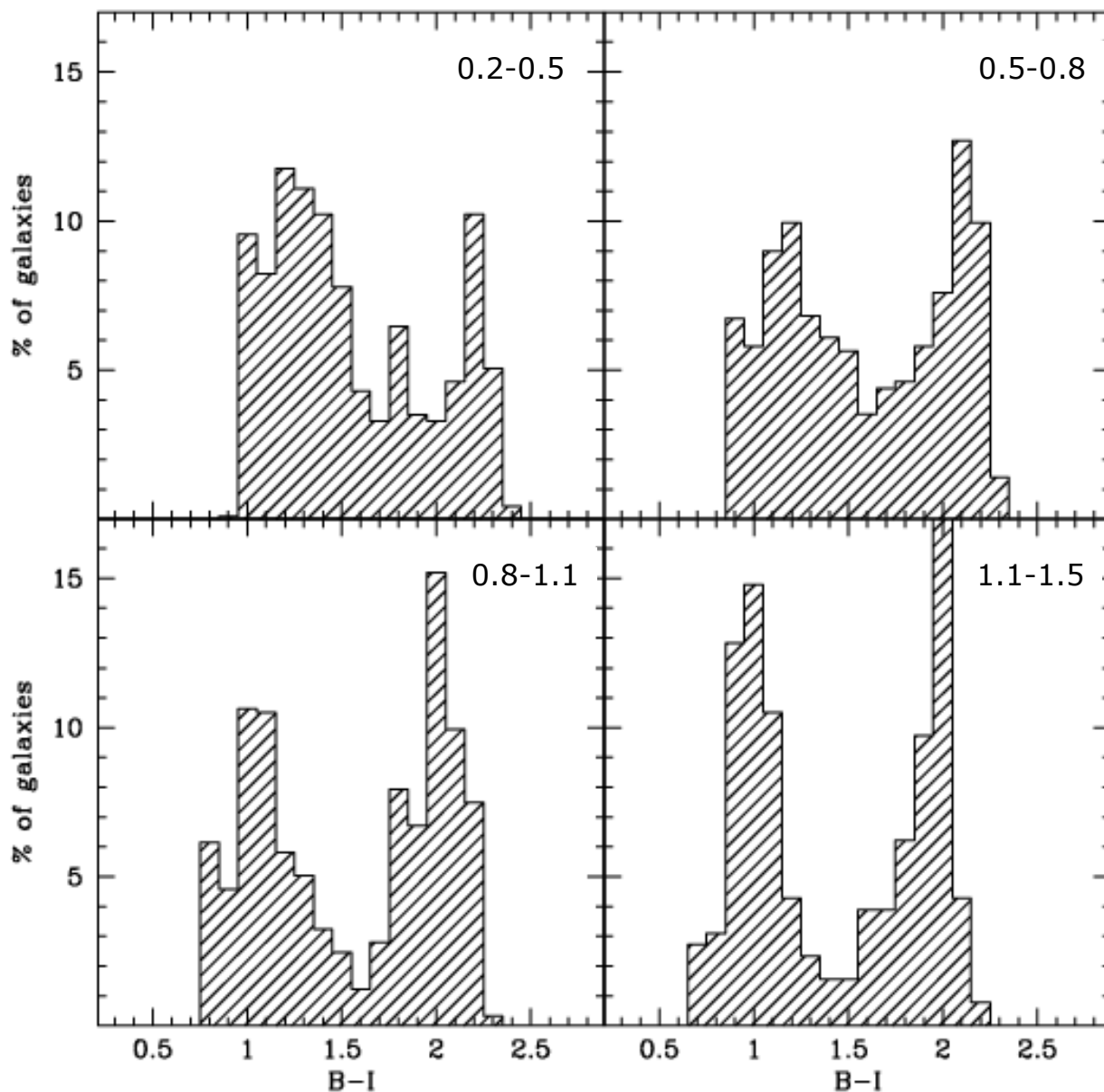
$0 < z < 1.5$

$I_{AB} < 23$

No Flag 1 objects

3498 galaxies

FixedAge $I_{AB} < 23$



COLOR BIMODALITY

CURRENT SAMPLE

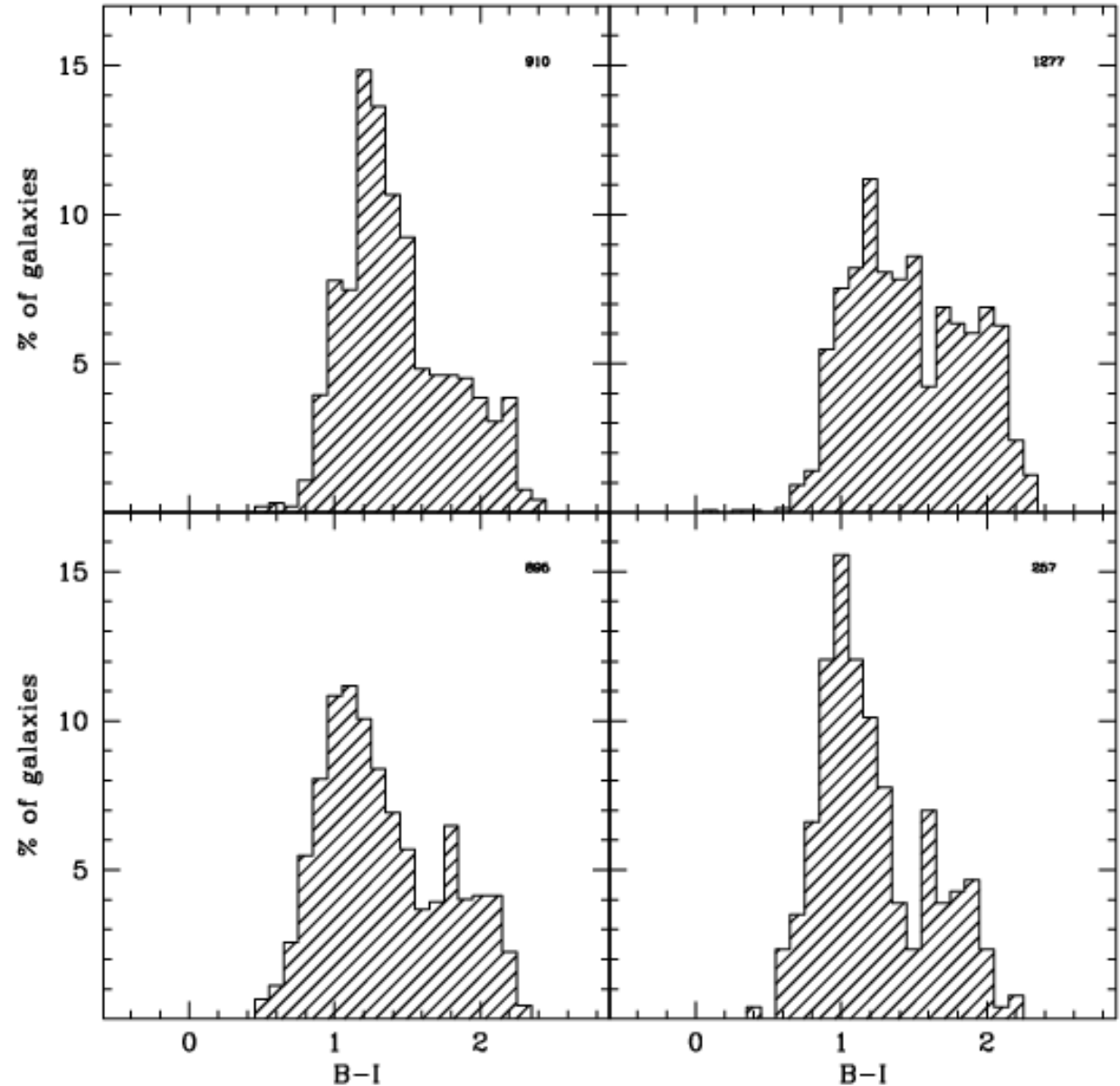
$0 < z < 2$

$I_{AB} < 24$

No Flag 1 objects

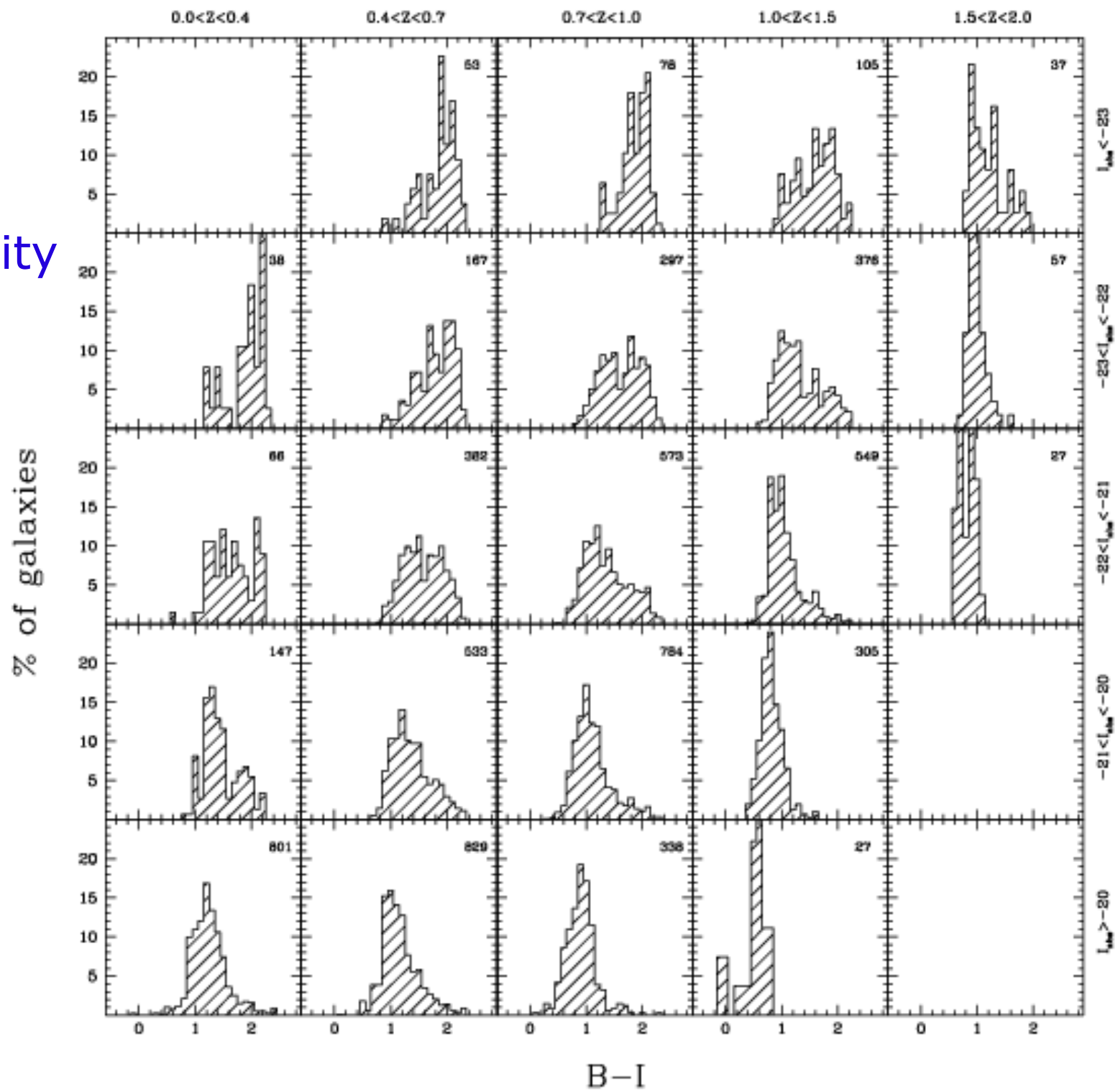
6601 galaxies

BestFit $I_{AB} < 23$



COLOR BIMODALITY

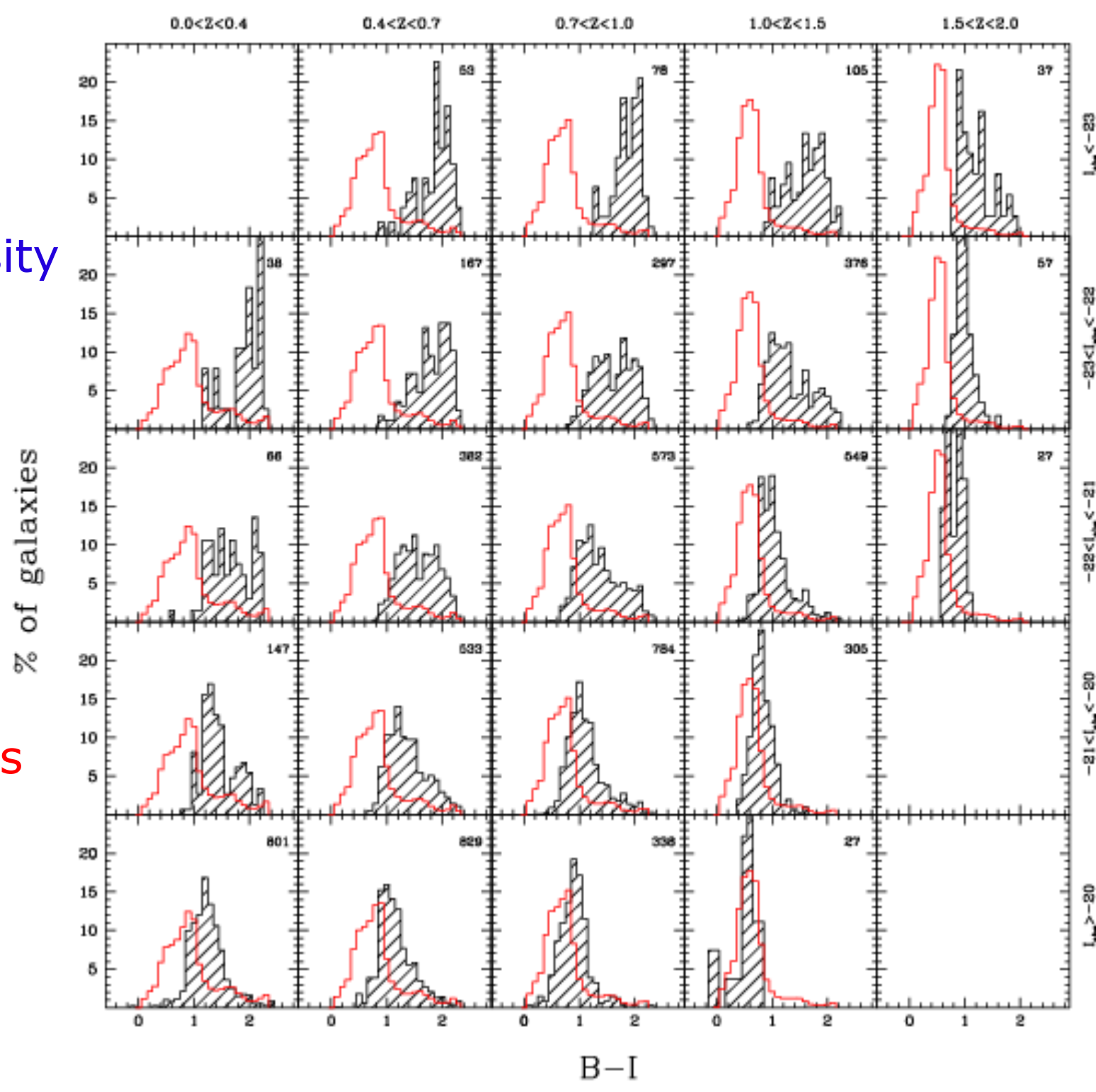
Bins in redshift
& bins in luminosity



COLOR BIMODALITY

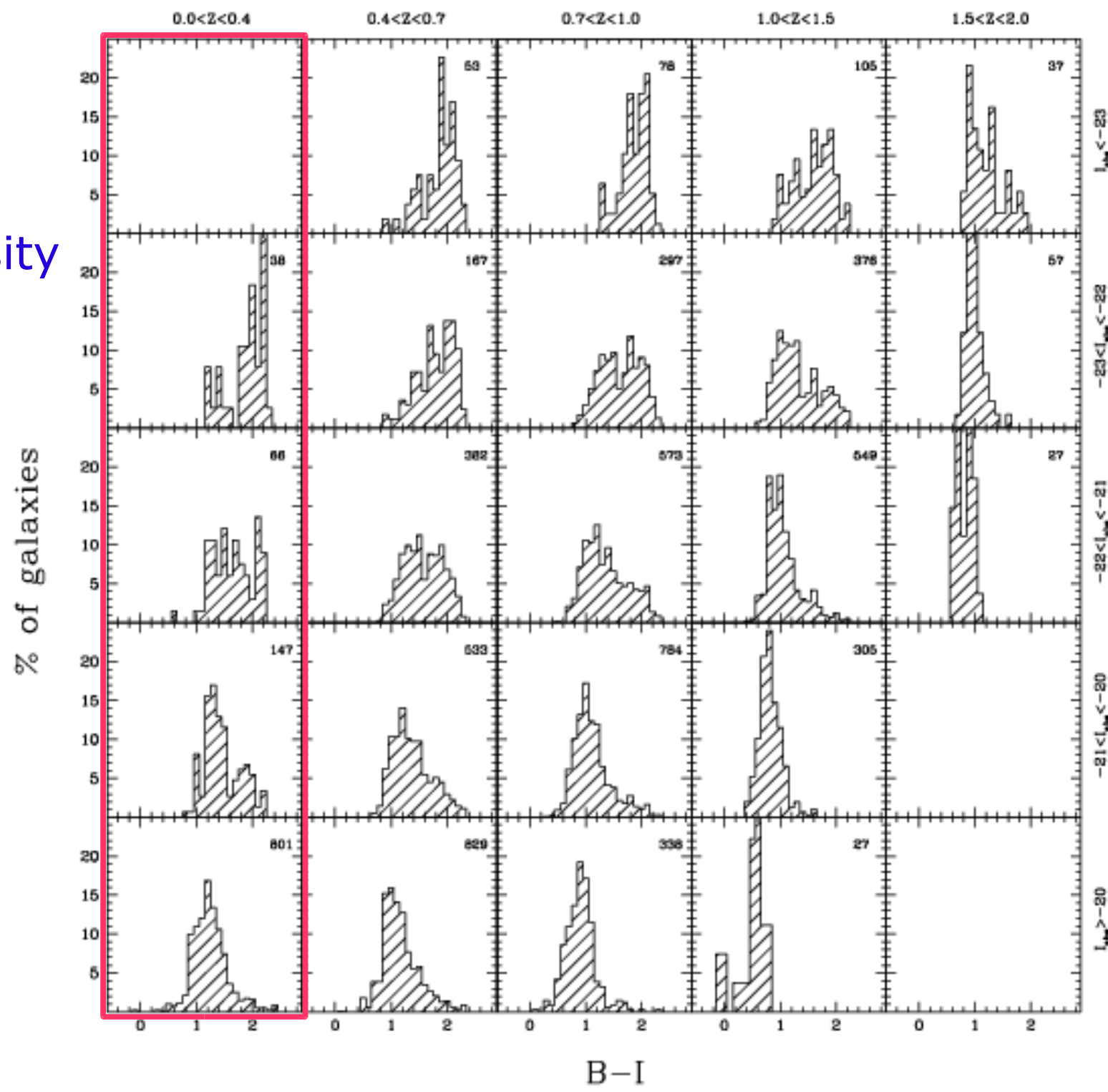
Bins in redshift
& bins in luminosity

Templates colors



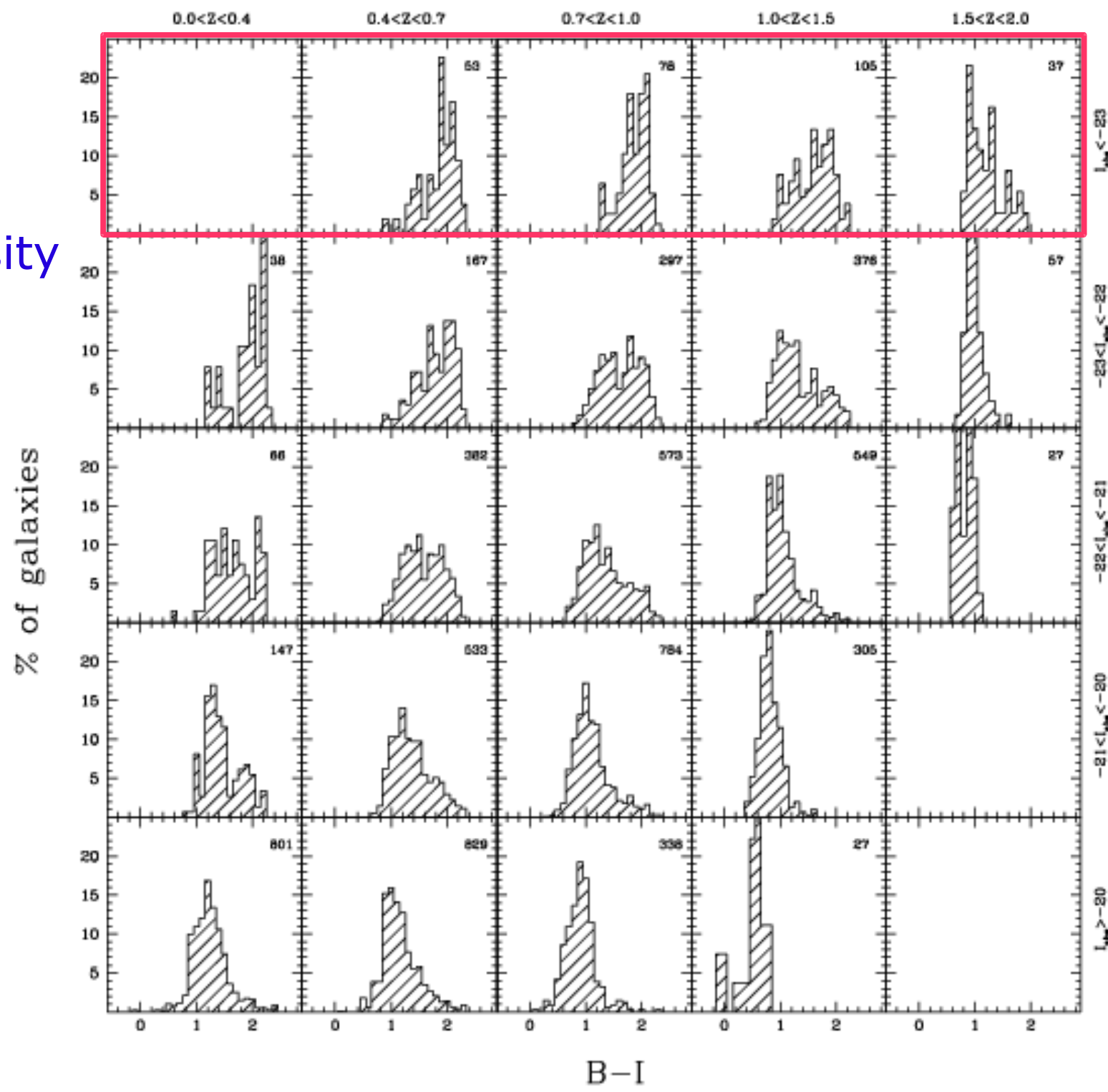
COLOR BIMODALITY

Bins in redshift
& bins in luminosity

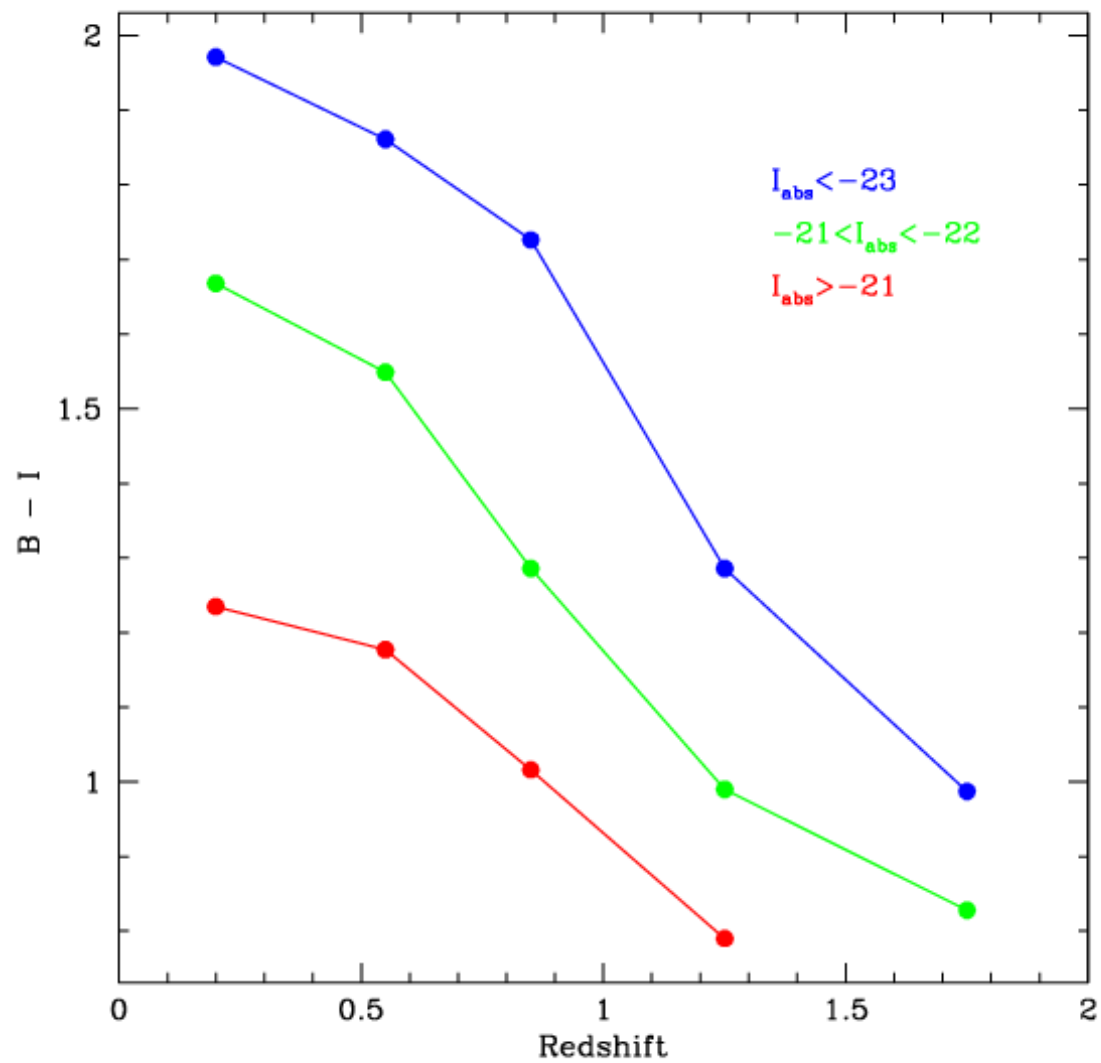
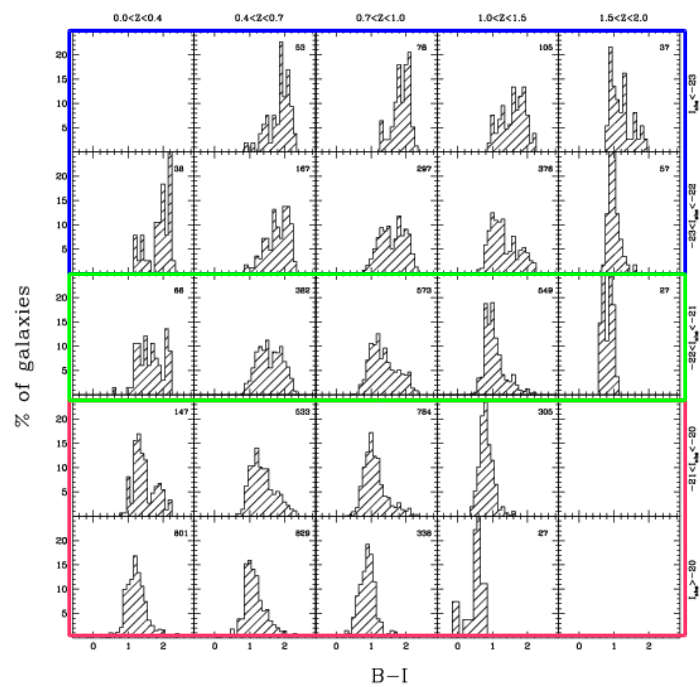


COLOR BIMODALITY

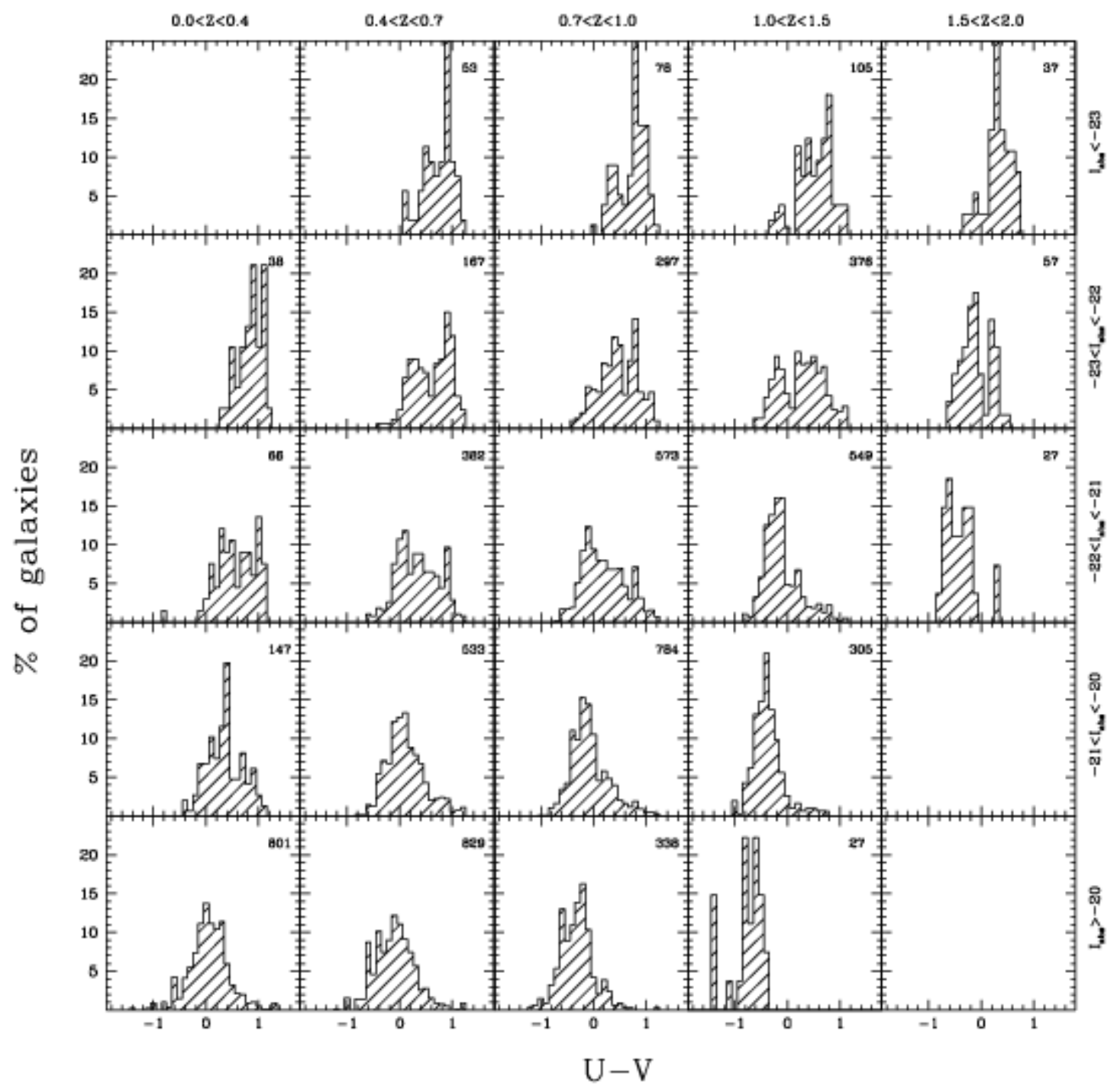
Bins in redshift
& bins in luminosity



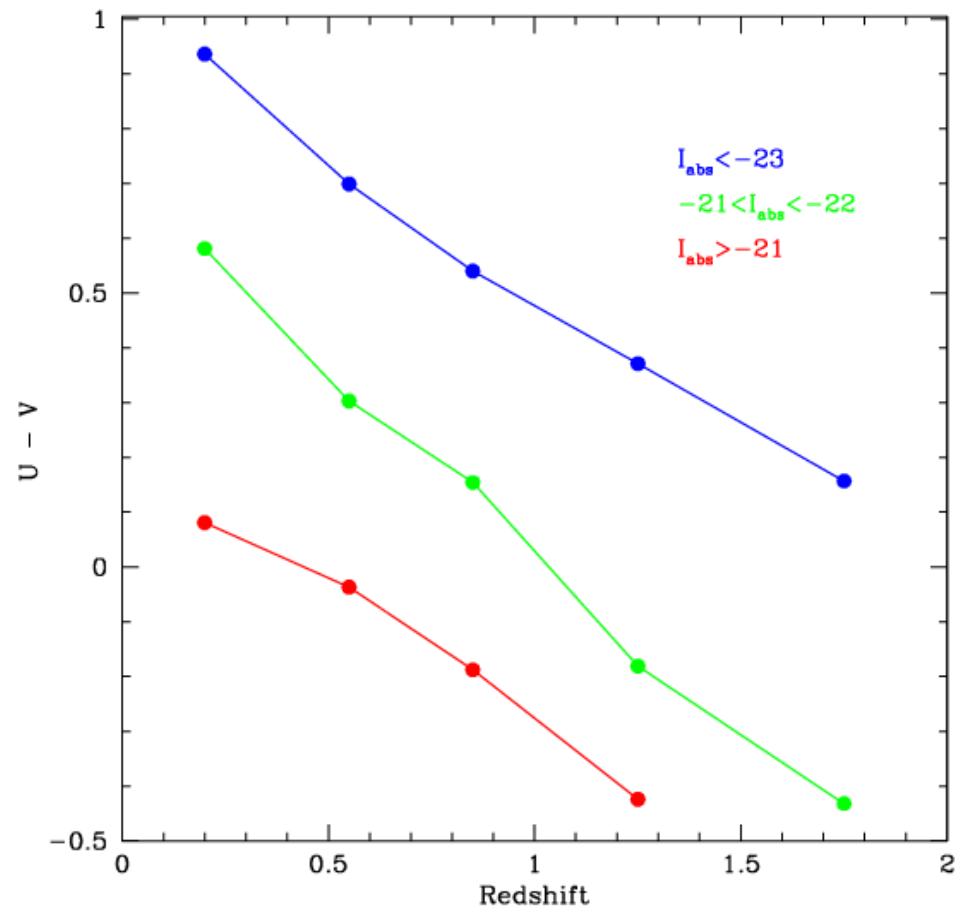
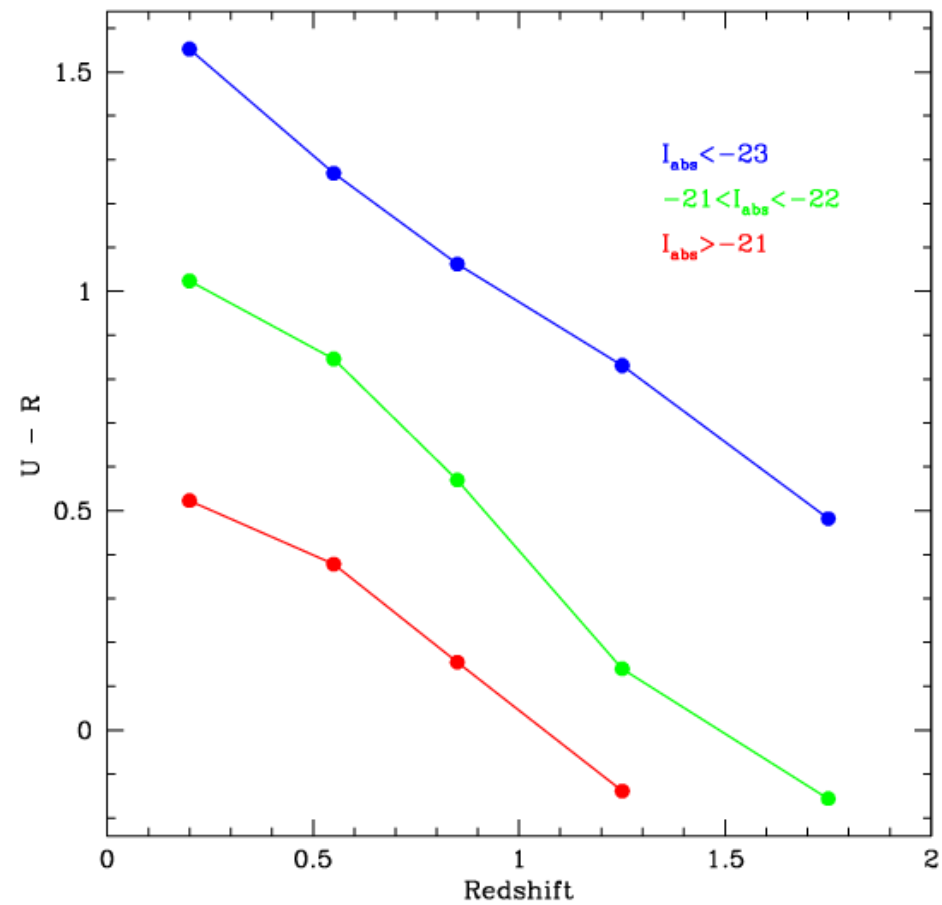
COLOR BIMODALITY



COLOR BIMODALITY



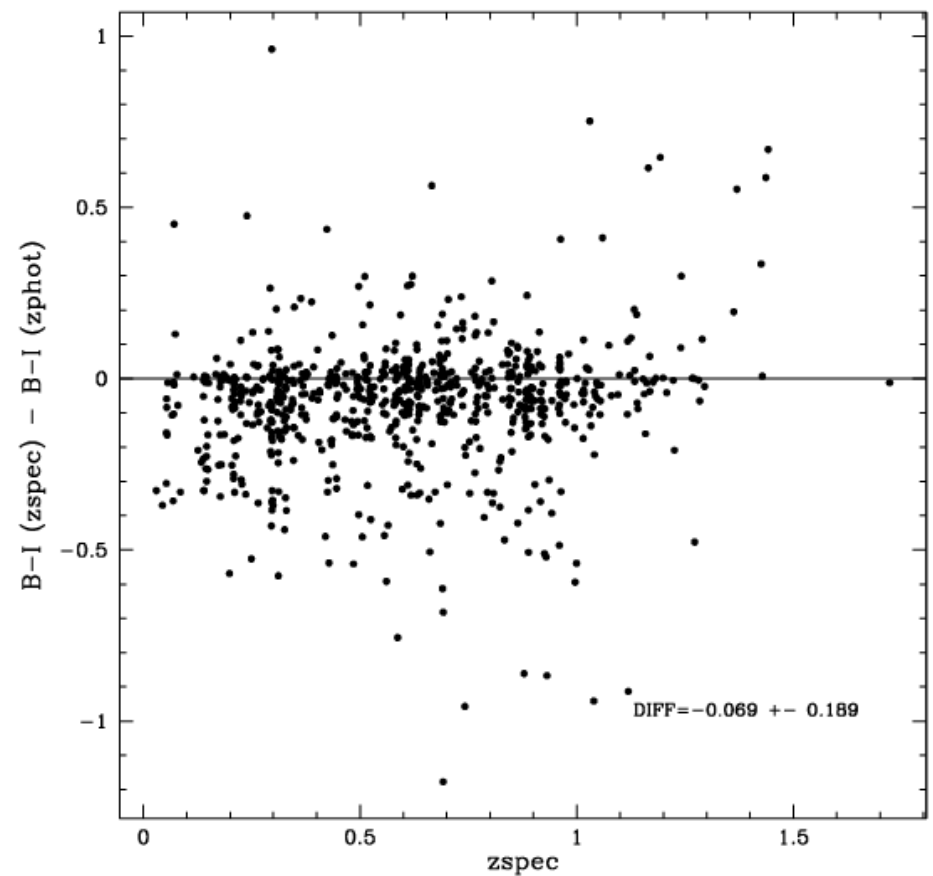
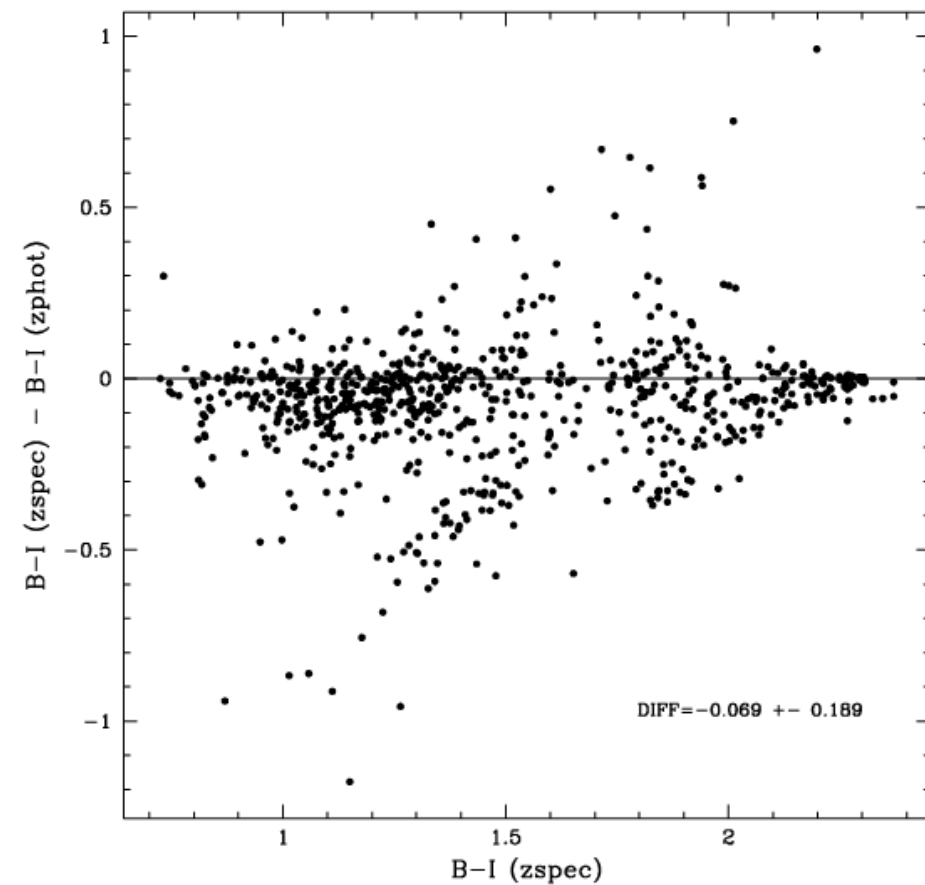
COLOR BIMODALITY



FUTURE DEVELOPMENT

- Enlarge the sample using z_{phot}

751 (out of 6601) objects with the best available z_{phot}



- Enlarge the sample using z_{phot}
- Quantify the difference in the bimodality of different colors
- Check the bimodality against other quantities (density)
- Weights?
-