A Significant Population of Red, Near-IR selected High Redshift Galaxies

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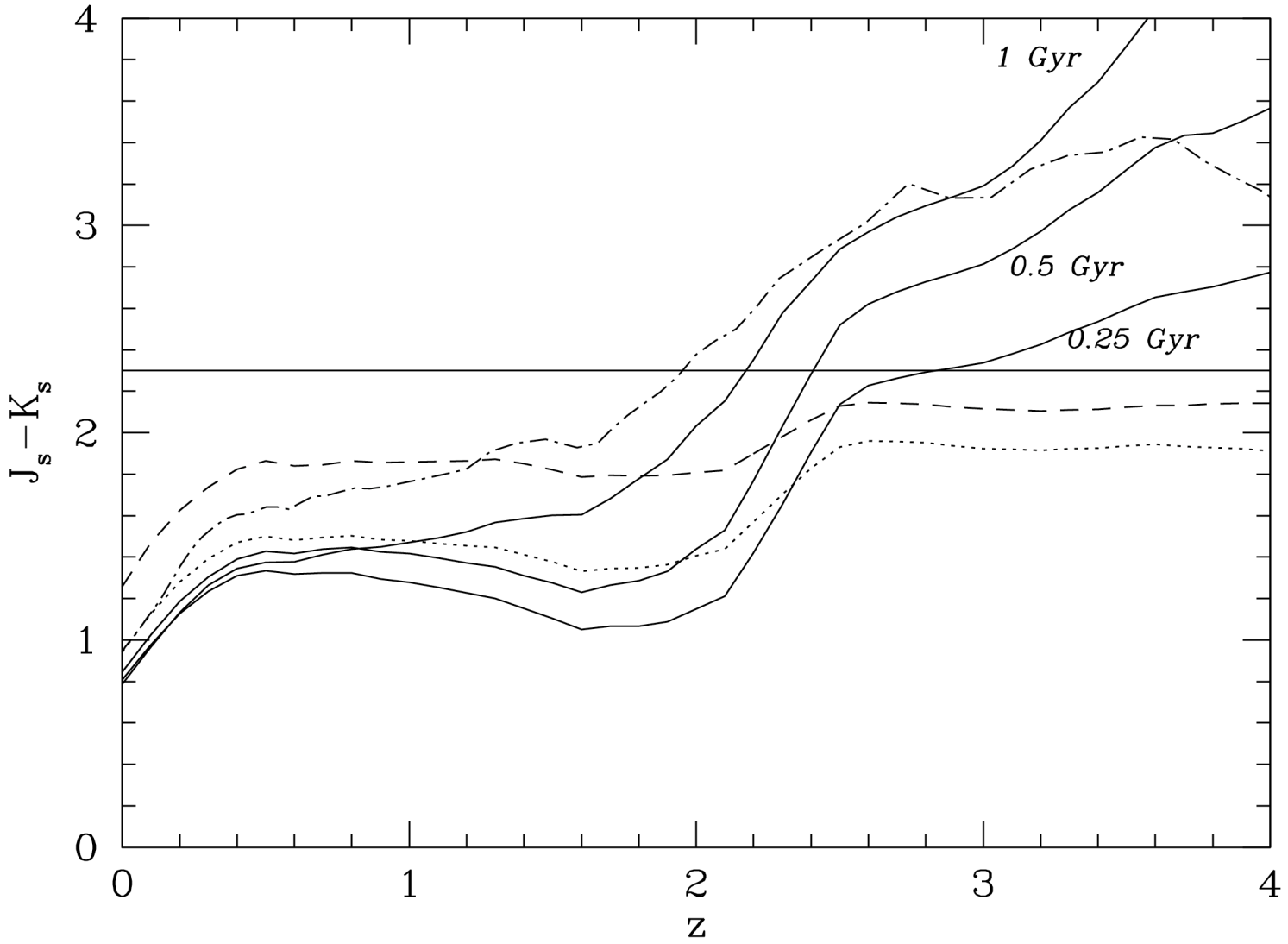
Galaxies at High Redshift are hard to see!

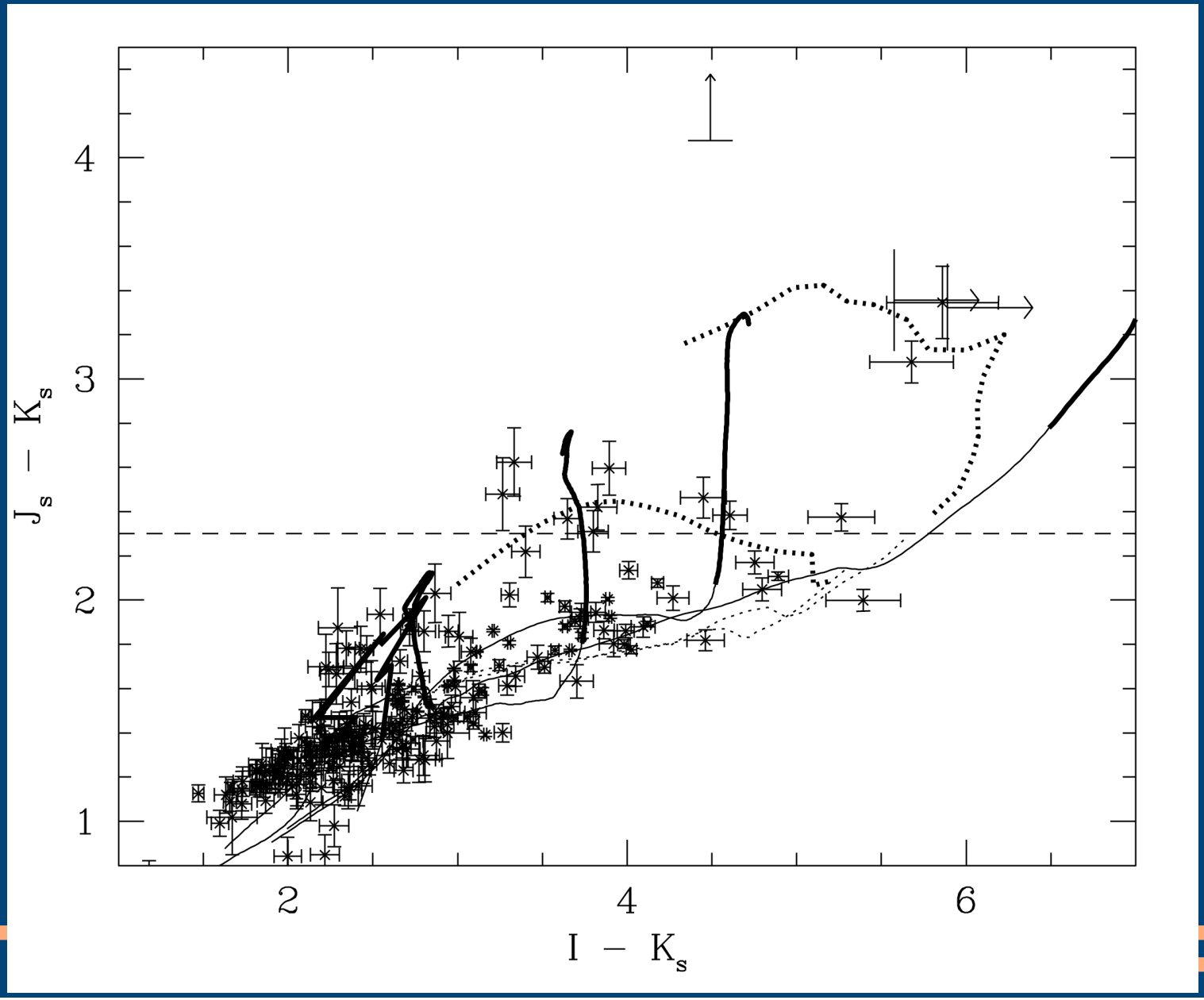
It is hard to find typical populations of galaxies at high redshift.

Different selection techniques find different types of galaxies. Usually extreme types – Are there regular galaxies like the ones in our local universe at high redshift?

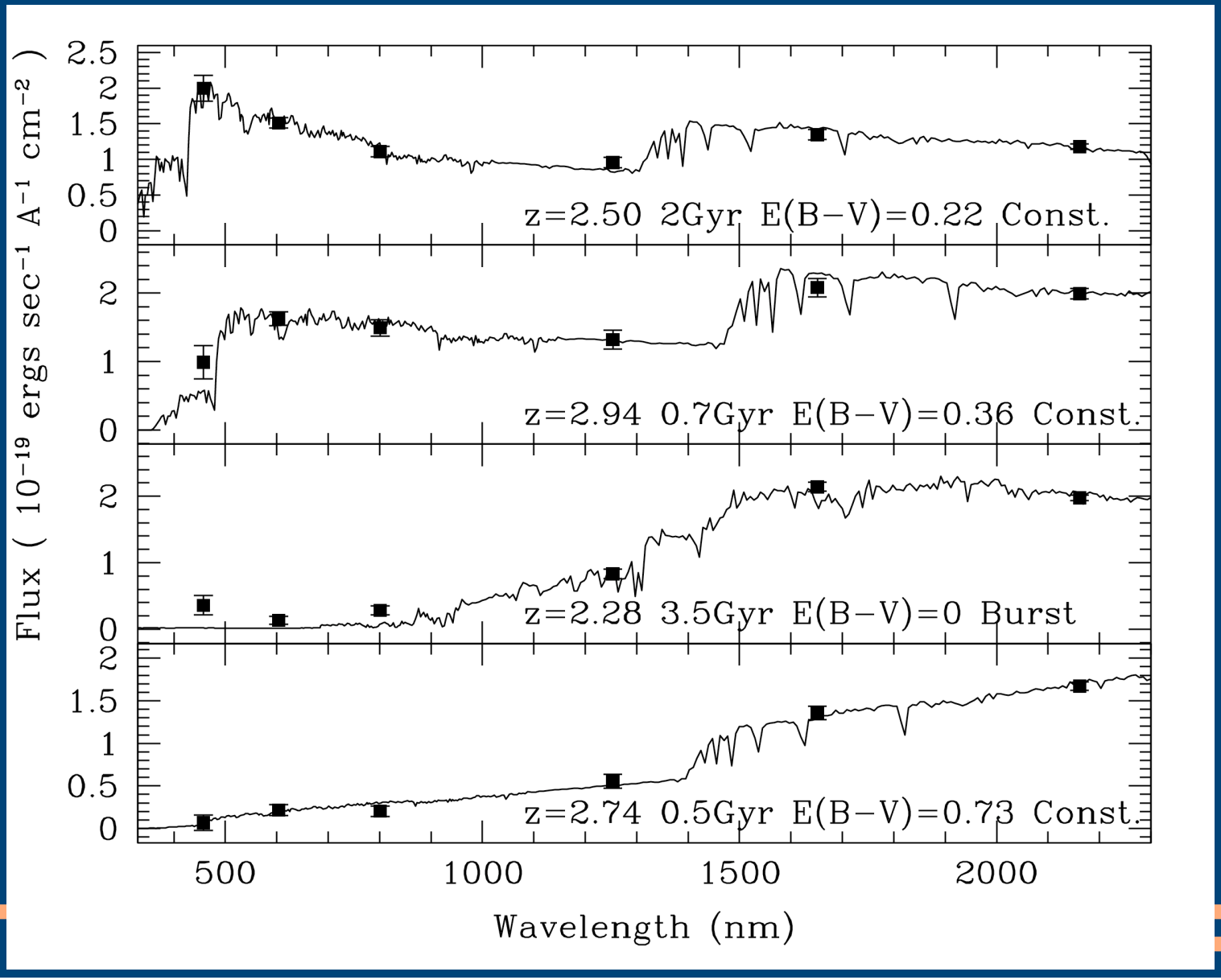
Color of Redshifted model SEDs



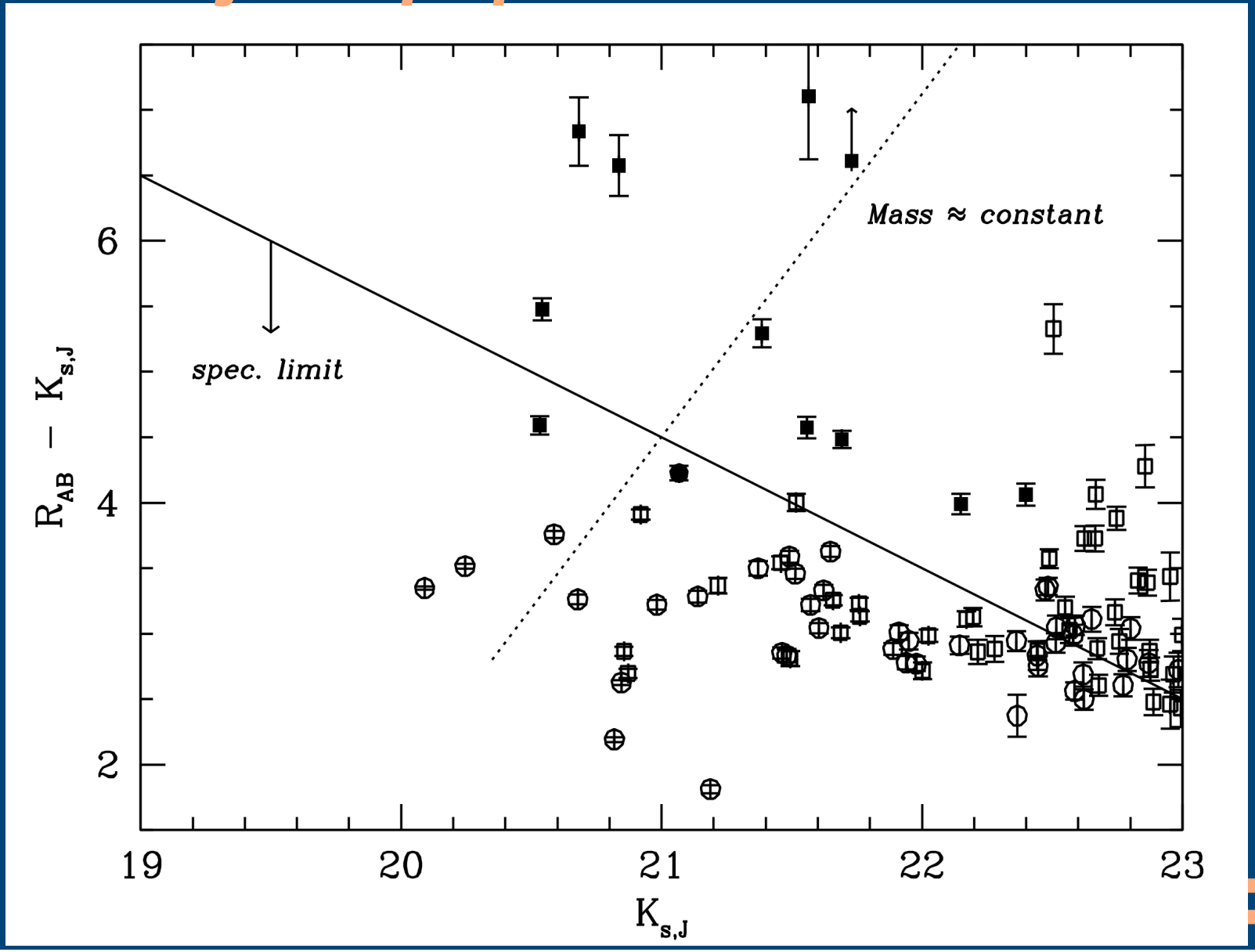
K band selected galaxies from HDF-S



Fitting the Data with model SEDs



"J-K" galaxies and LBGs seem to be disjoint populations.



What are these things?

- They really 'are' Lyman break Galaxies (LBG), but they are being viewed through a line of sight with a lot of dust.
- Maybe they are LBGs which are currently not exhibiting a burst of star formation.

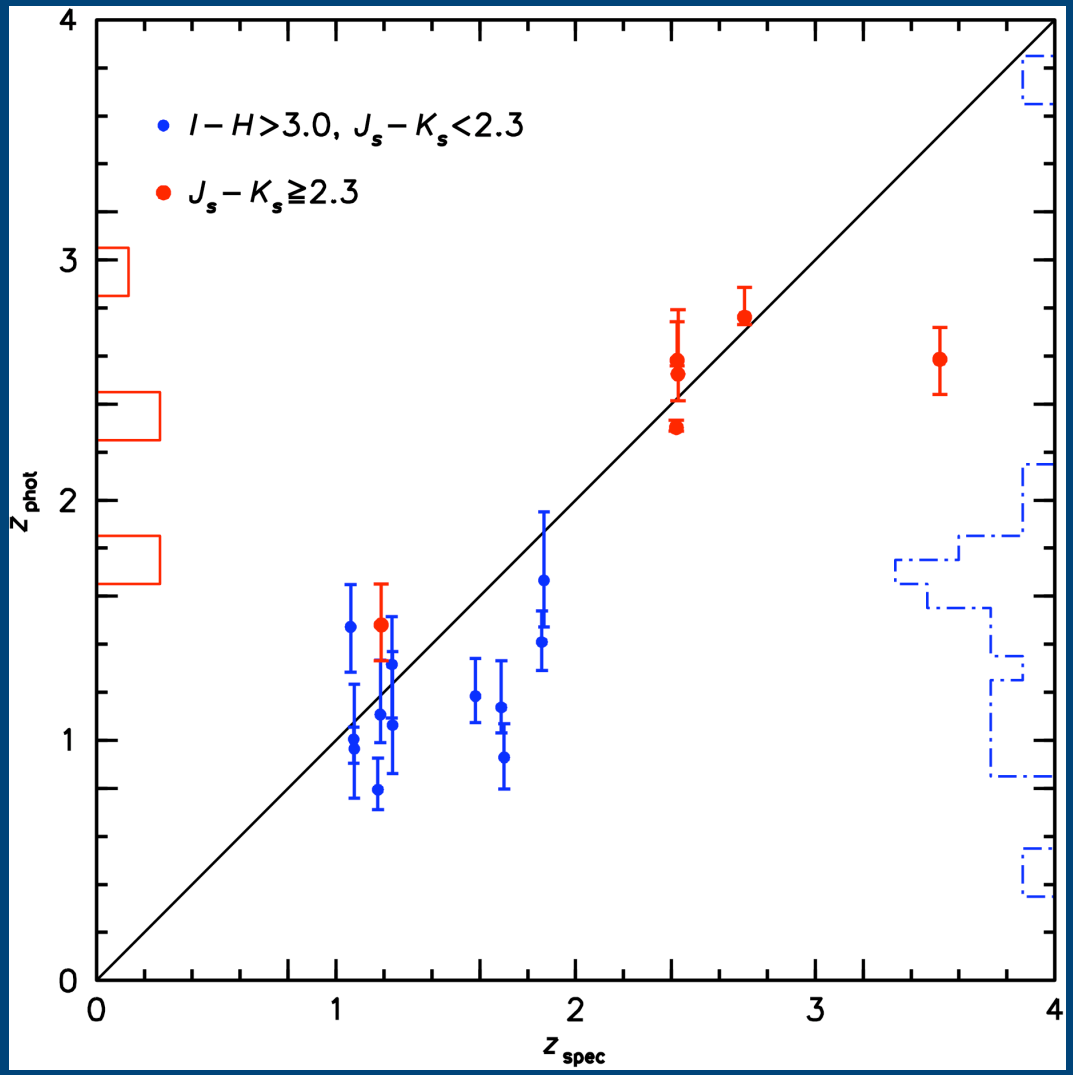
Maybe these galaxies are directly related to Lyman Break Galaxies

What are these things?

- Maybe this population of red galaxies 'were' LBGs which stopped forming stars, and began to age passively.

Maybe these galaxies are descendents of Lyman Break Galaxies

Photometric vs. Spectroscopic redshifts



Conclusions

Spectroscopic redshifts of a few of the bright J-K galaxies confirms they are at z~2-3, and shows that this selection criteria is pretty efficient: 5 of 6 had z>2.

When you look hard enough, the high redshift universe seems to have everything you are looking for.