UV-Luminosity density at z=1~3 with the UKIDSS-UDS survey

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outline

- Introduction
- UKIDSS-UDS
- UV LF and UV LD at z =1~3
- Future work
- Summary

Introduction

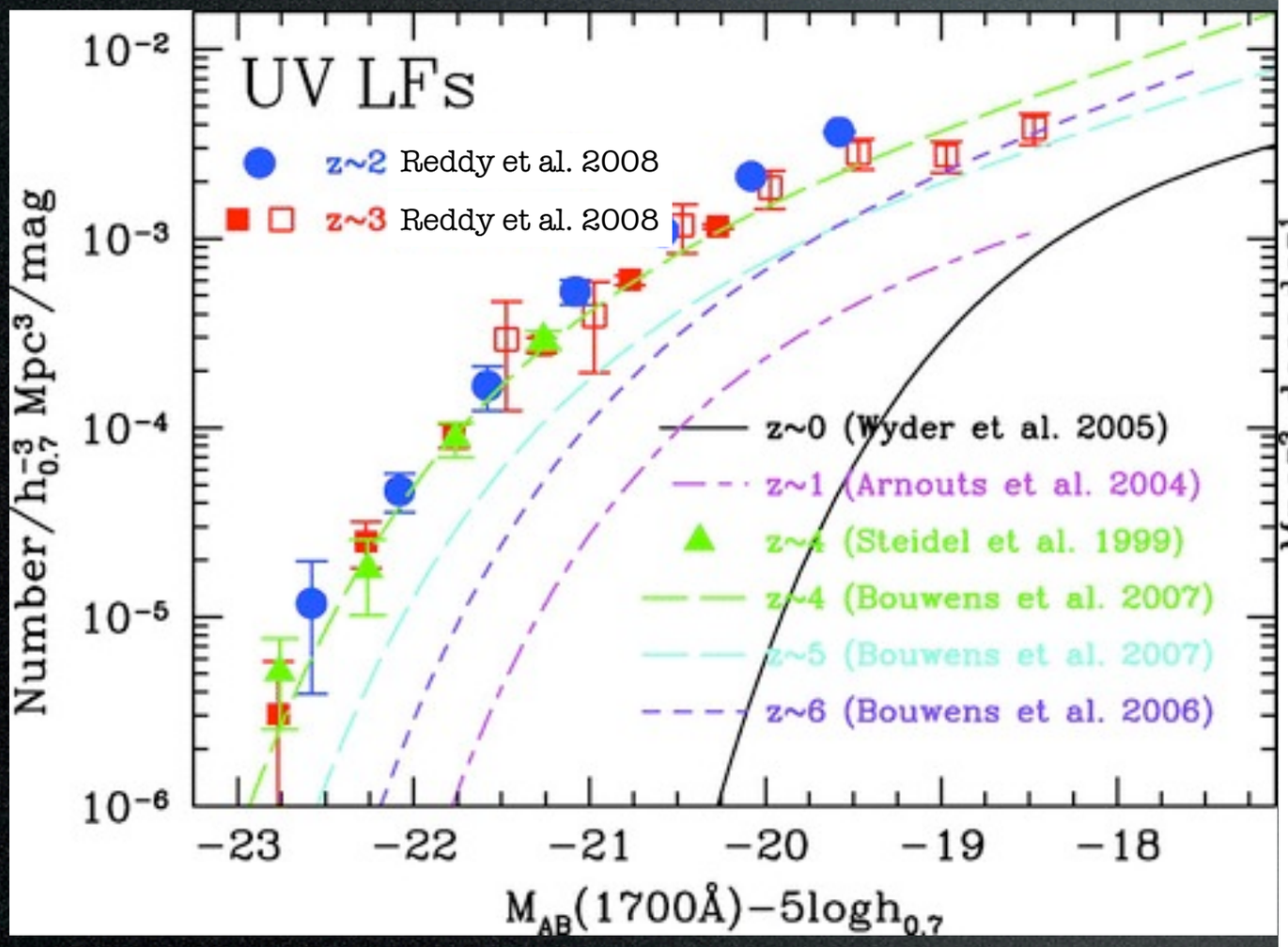
Motivation :

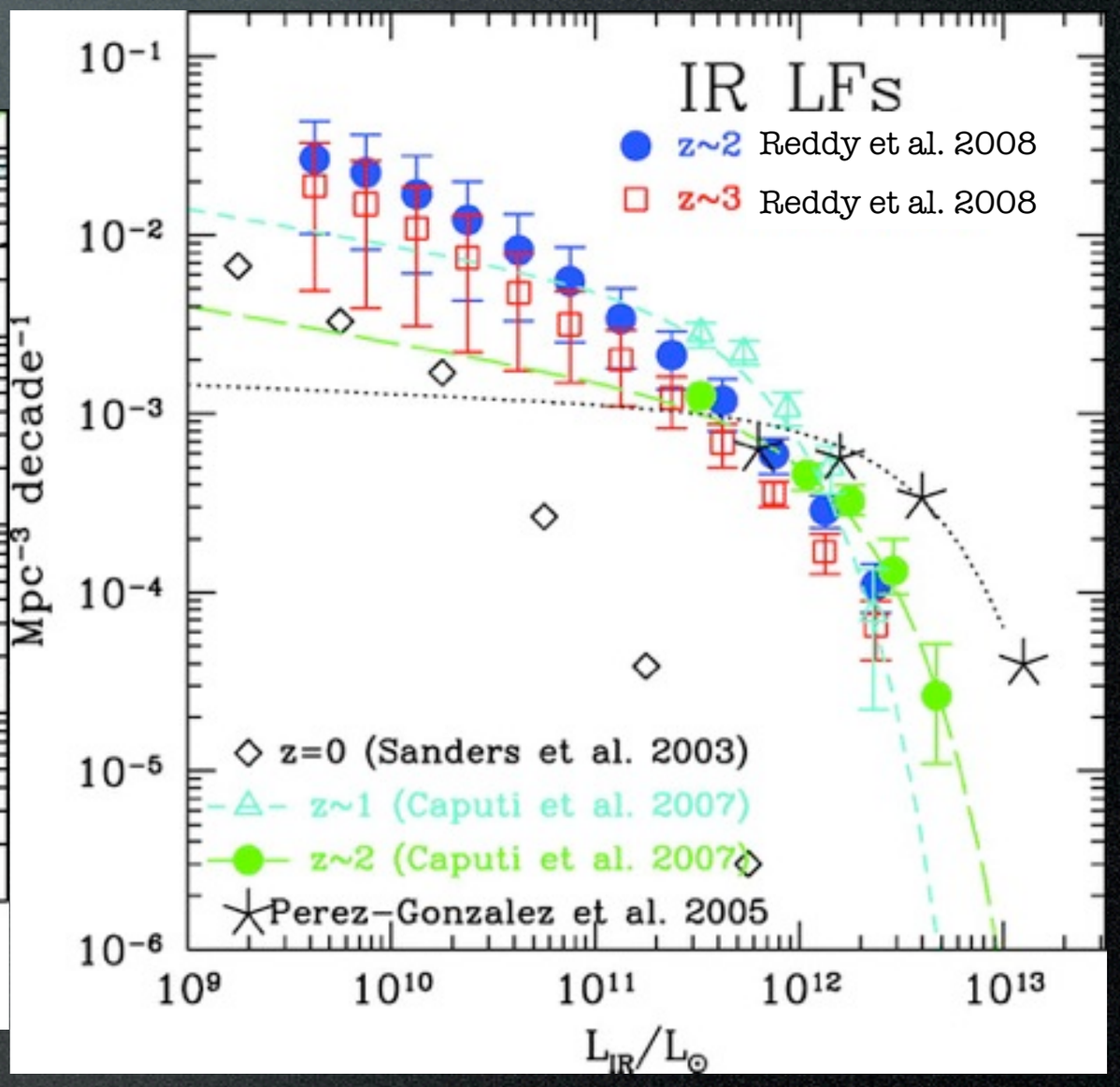
- UV Luminosity --- Star formation rate
- Dusty --- IR Luminosity
- SFR
  - UV Luminosity
  - IR Luminosity

LF (UV vs IR)

Previous Studies

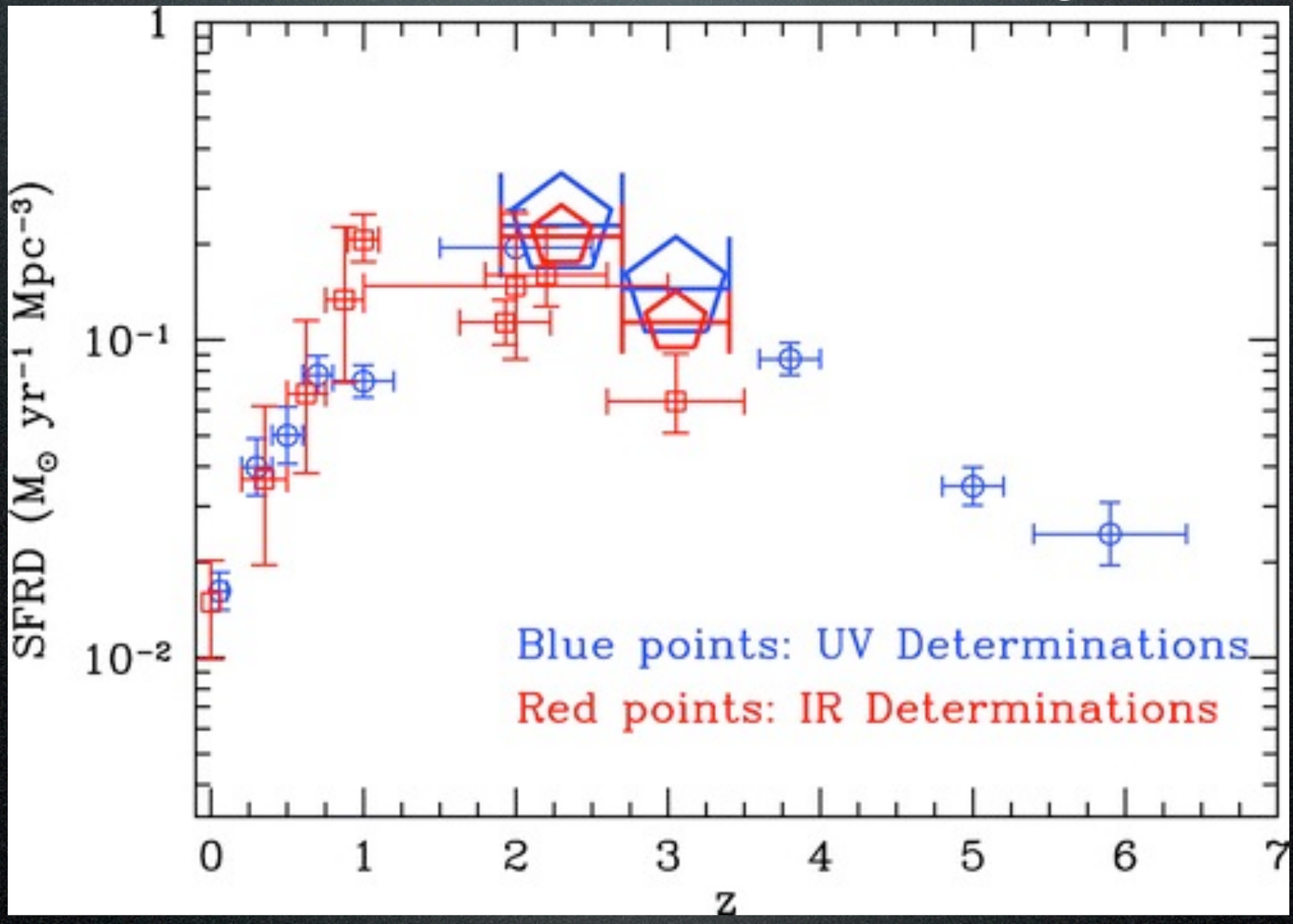
Reddy et al. 2008





SFRH: UV vs IR

Reddy et al. 2008



UKIDSS
The UKIRT Infrared Deep Sky Survey

- UKIRT :

  United Kingdom Infra-Red Telescope

- Survey instrument:

  WFCAM on UKIRT in Hawaii

- UKIDSS: survey 7500 square degrees of the Northern sky.

- Data release to ESO and worldwide public 18 months later.

UKIDSS survey design

Ultra Deep Survey	UDS	JHK	K=23.0	0.77 deg^2	ExGal
Deep Extragalactic Survey	DXS	JK	K=21.0	35 deg^2	ExGal
Galactic Plane Survey	GPS	JHK	K=19.0	1800 deg^2	Gal
Galactic Clusters Survey	GCS	ZYJHK	K=18.7	1600 deg^2	Gal
Large Area Survey	LAS	YJHK	K=18.4	4000 deg^2	ExGal

UKIDSS Ultra-Deep Survey

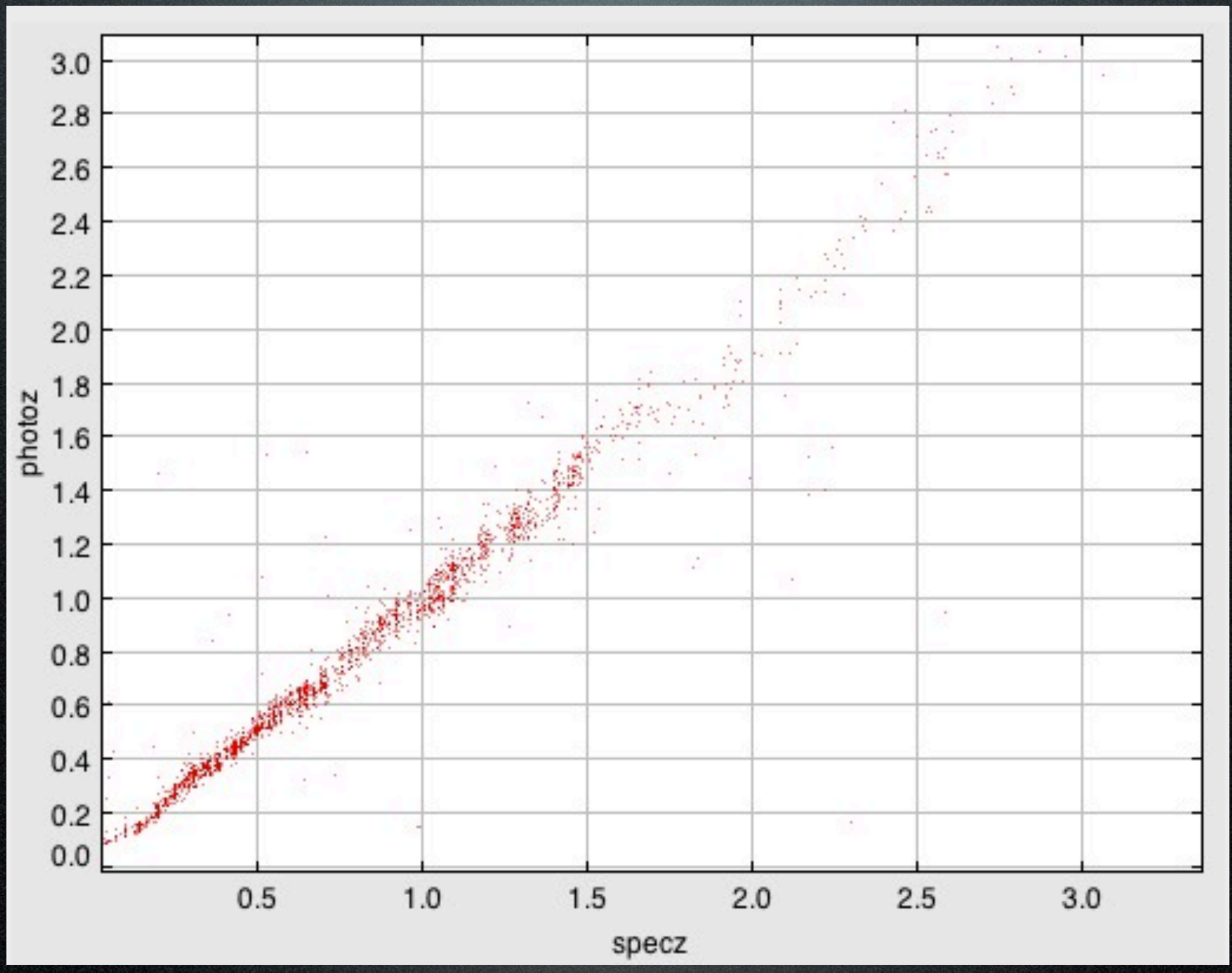
- UKIDSS UDS provide very deep IR data
- Combine UV, Optical and IR to have a full census of the Universe.
- advantage: CFHT u-band (~27.5)

  Subaru optical (~26-28)

  UKIRT NIR (~24)

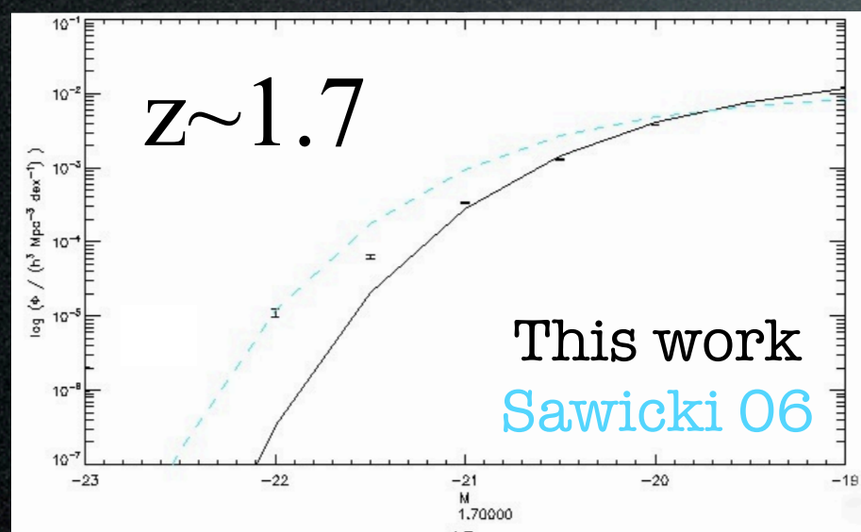
  Spitzer IR (~24)

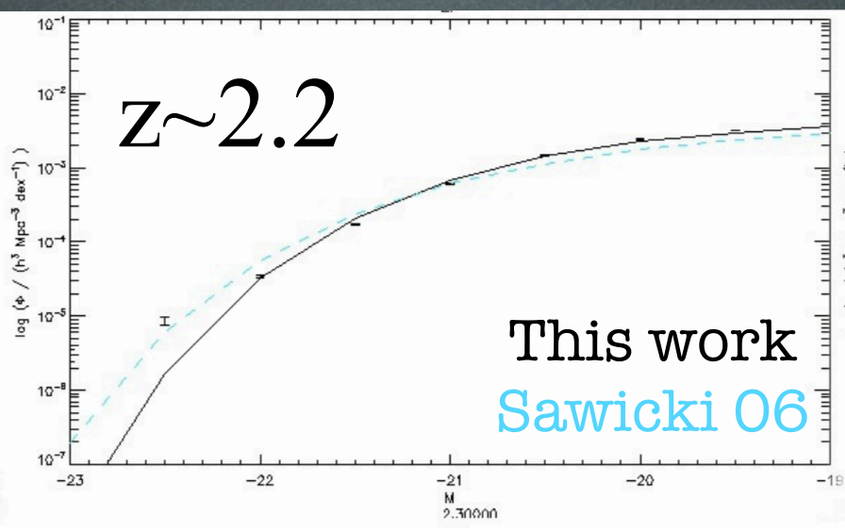
Zphot vs Zspec

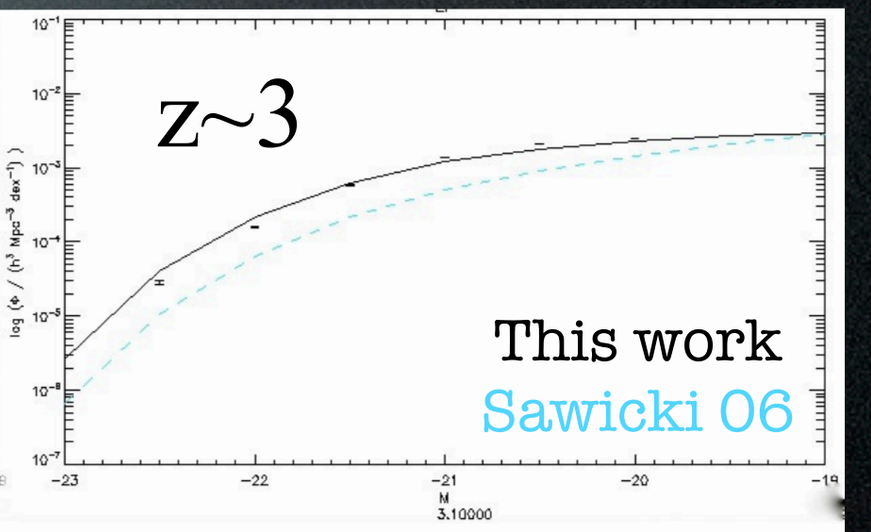


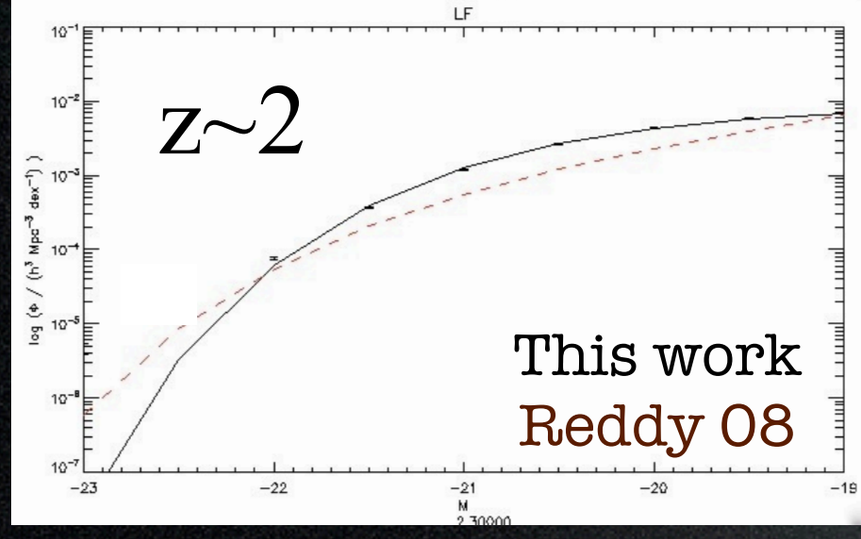
UV LF

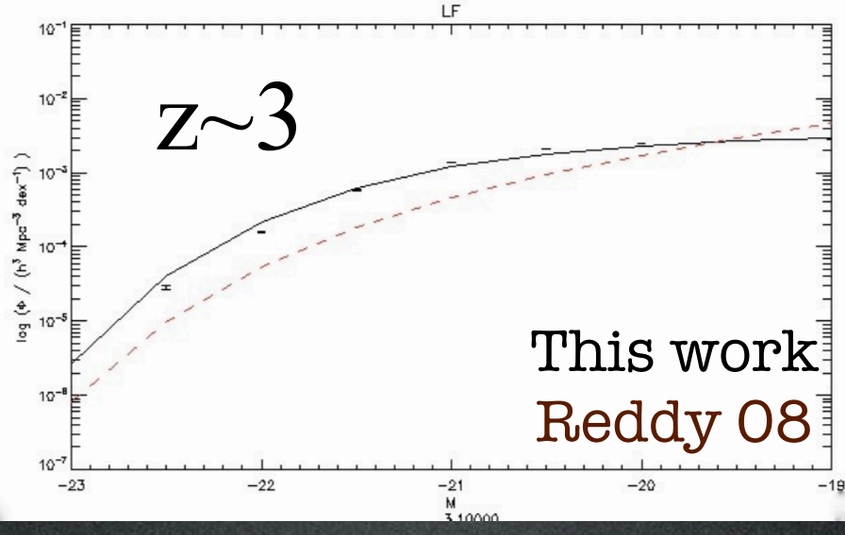
- compare to previous studies



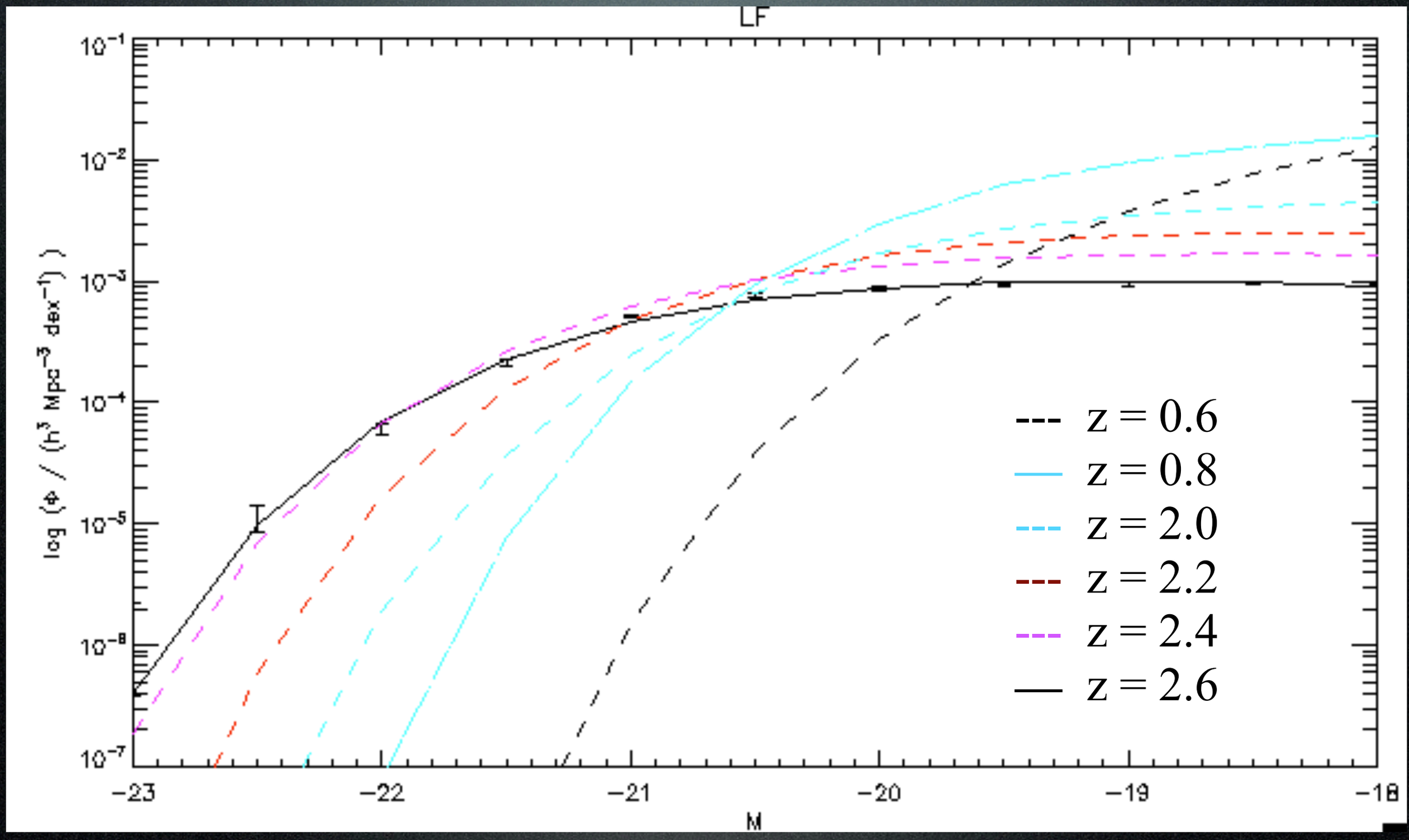






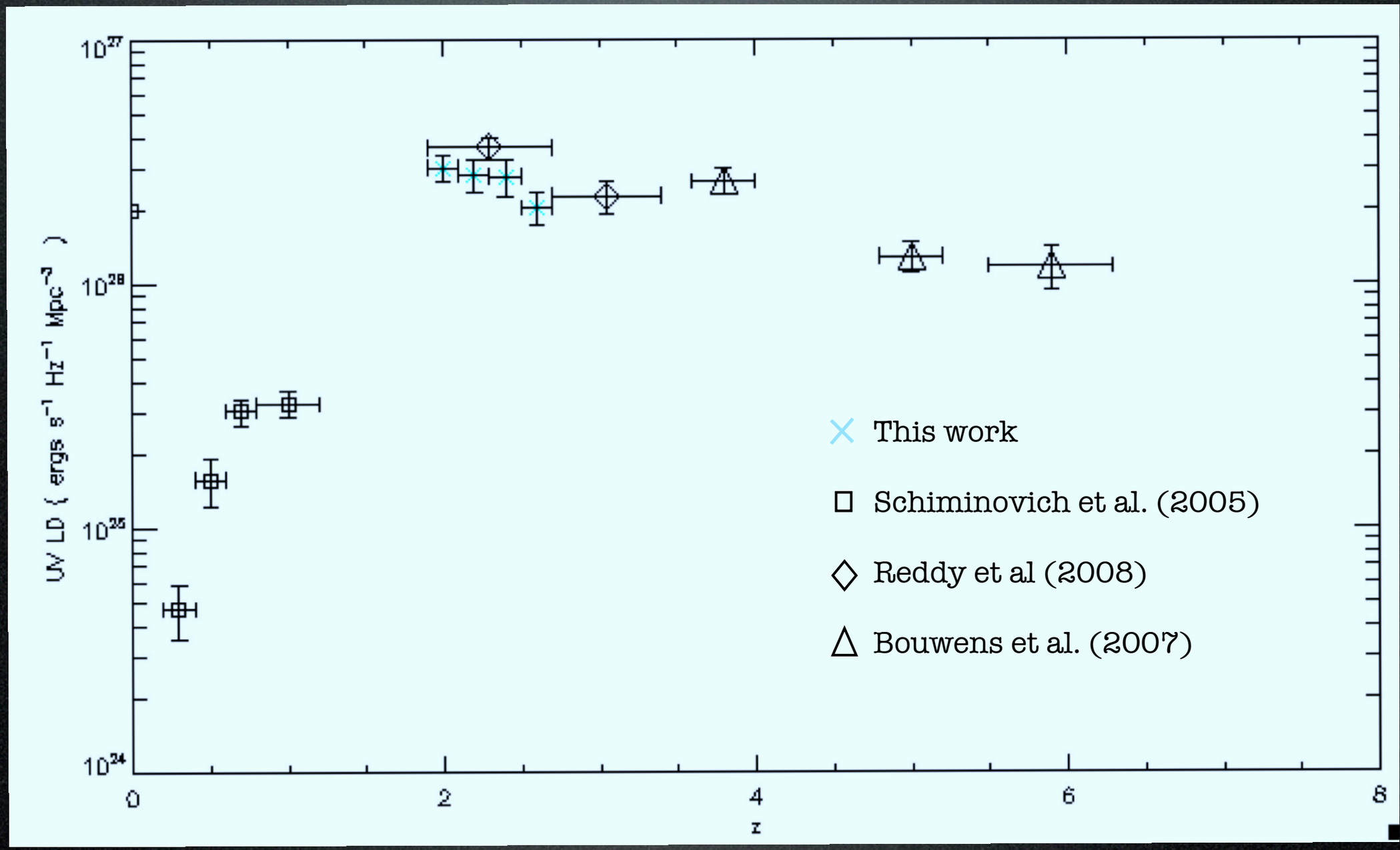


UV-LF evolution



UV Luminosity Density

- comparison with previous studies



Future work

- To slice the mass of galaxy to see the effect from different mass.
- To obtain longer wavelength data and derive IR LF. (e.g. 24 micron)
- Compare the UV and IR to completely determine SFR.

Summary

- UKIDSS-UDS provide the deeply data for our study.
- The selection method let our samples are good for studying all star-forming galaxies
- Our results, LD evolution are similar with previous studies.

Thank you