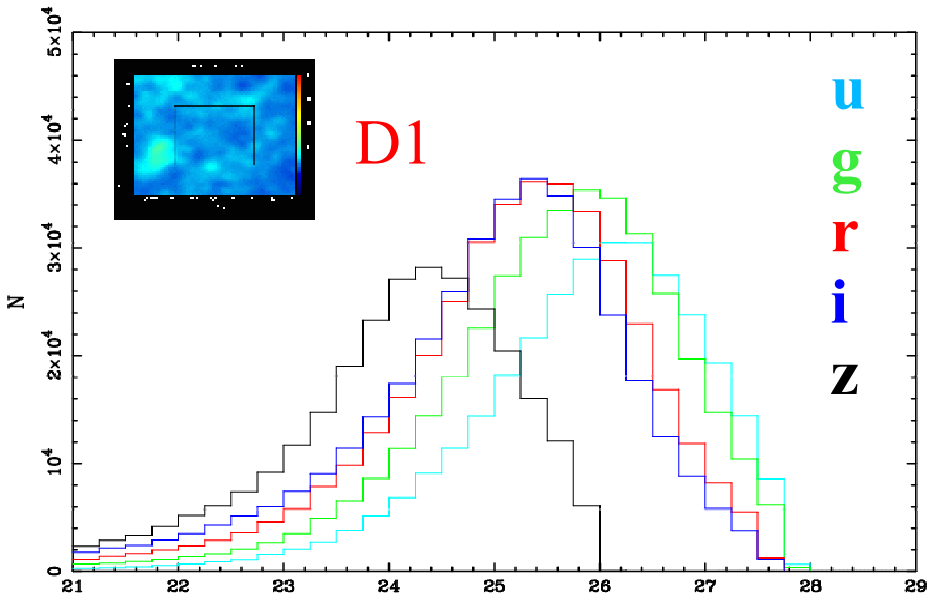
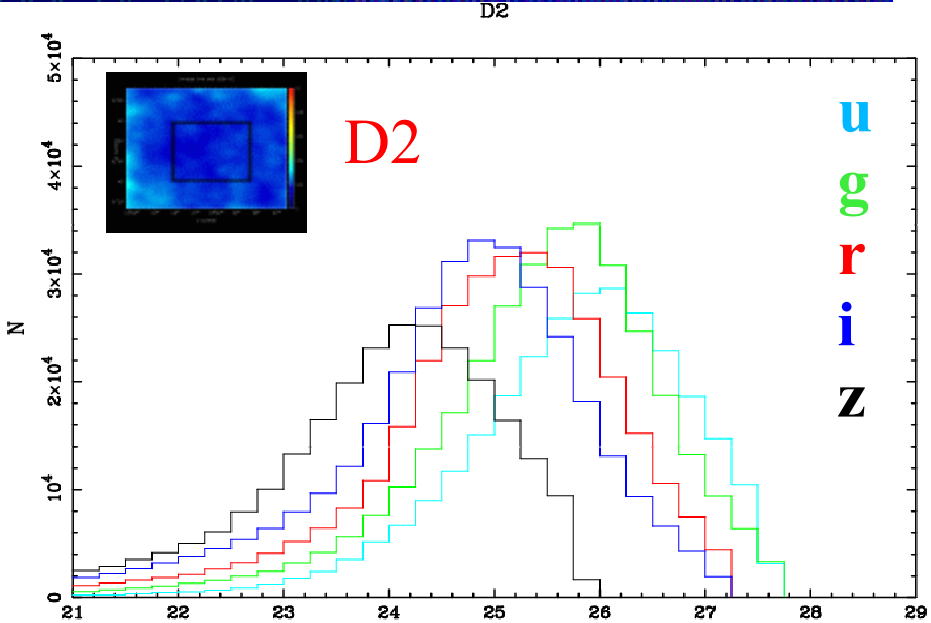
Redshifts Photometriques et Proprietes des galaxies dans les CFHTLS Deep Fields

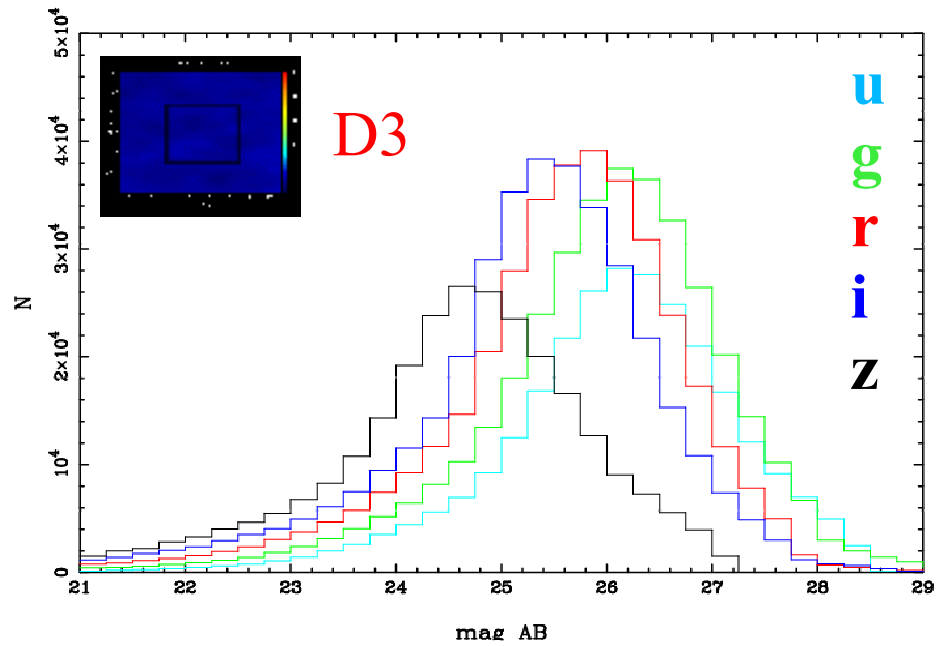
R. Pello & F. Ienna (LAOMP, Toulouse)

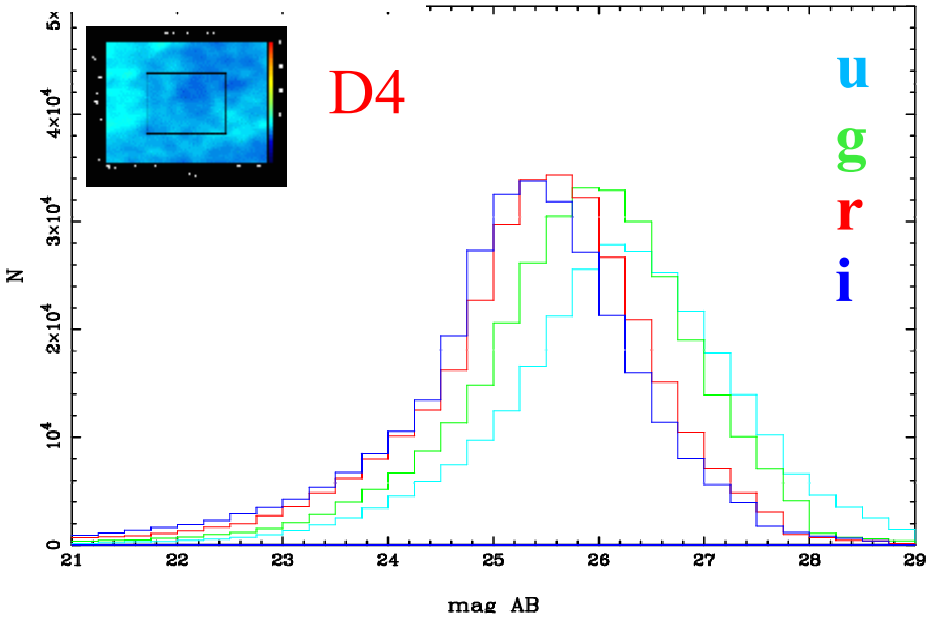
Les CFHTLS Deep Fields



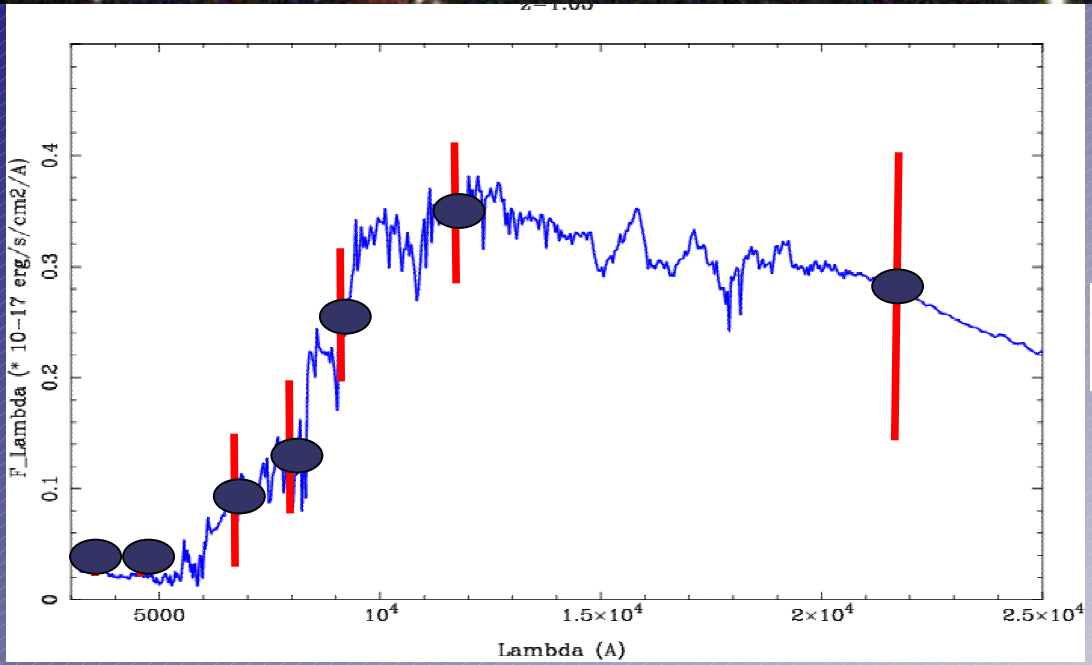


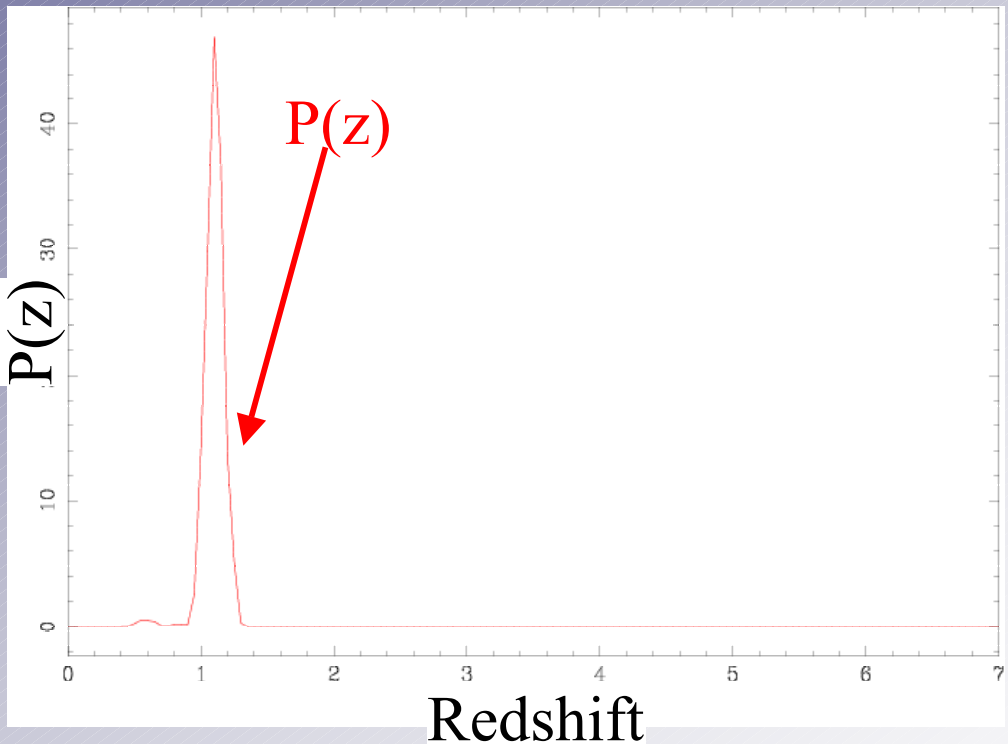
Objects detected with S/N>~1 in 3 filters at least

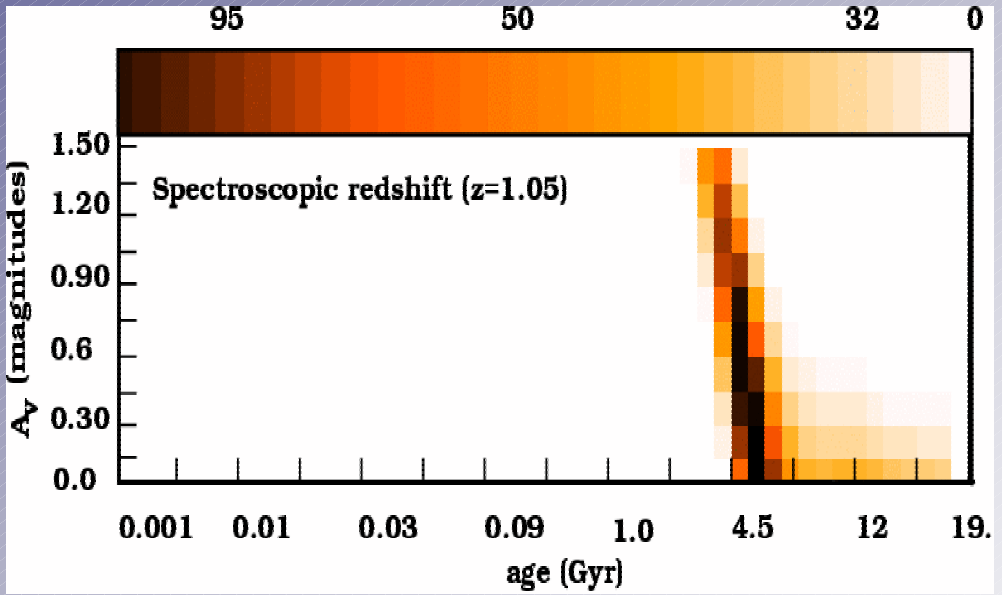


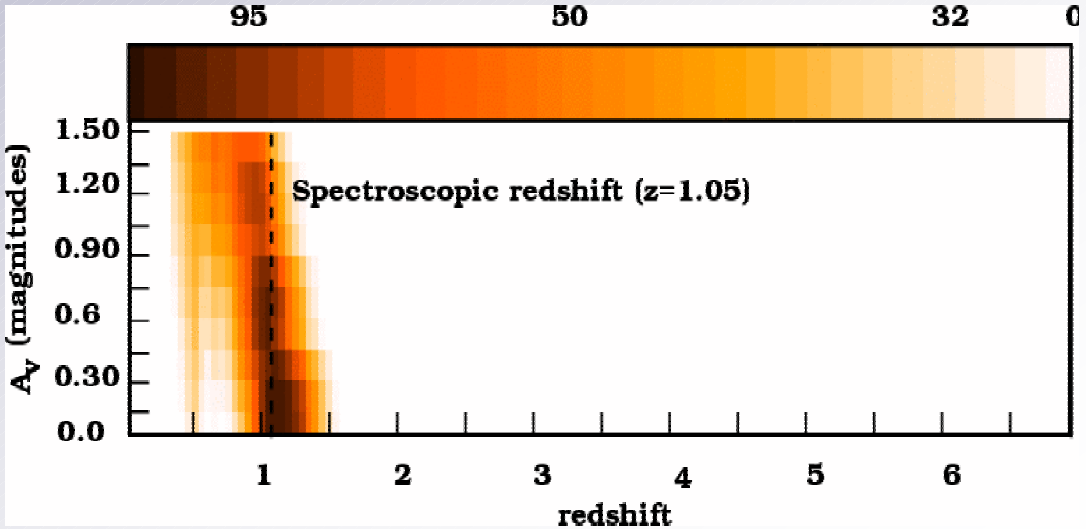


Photozs: SED fitting method



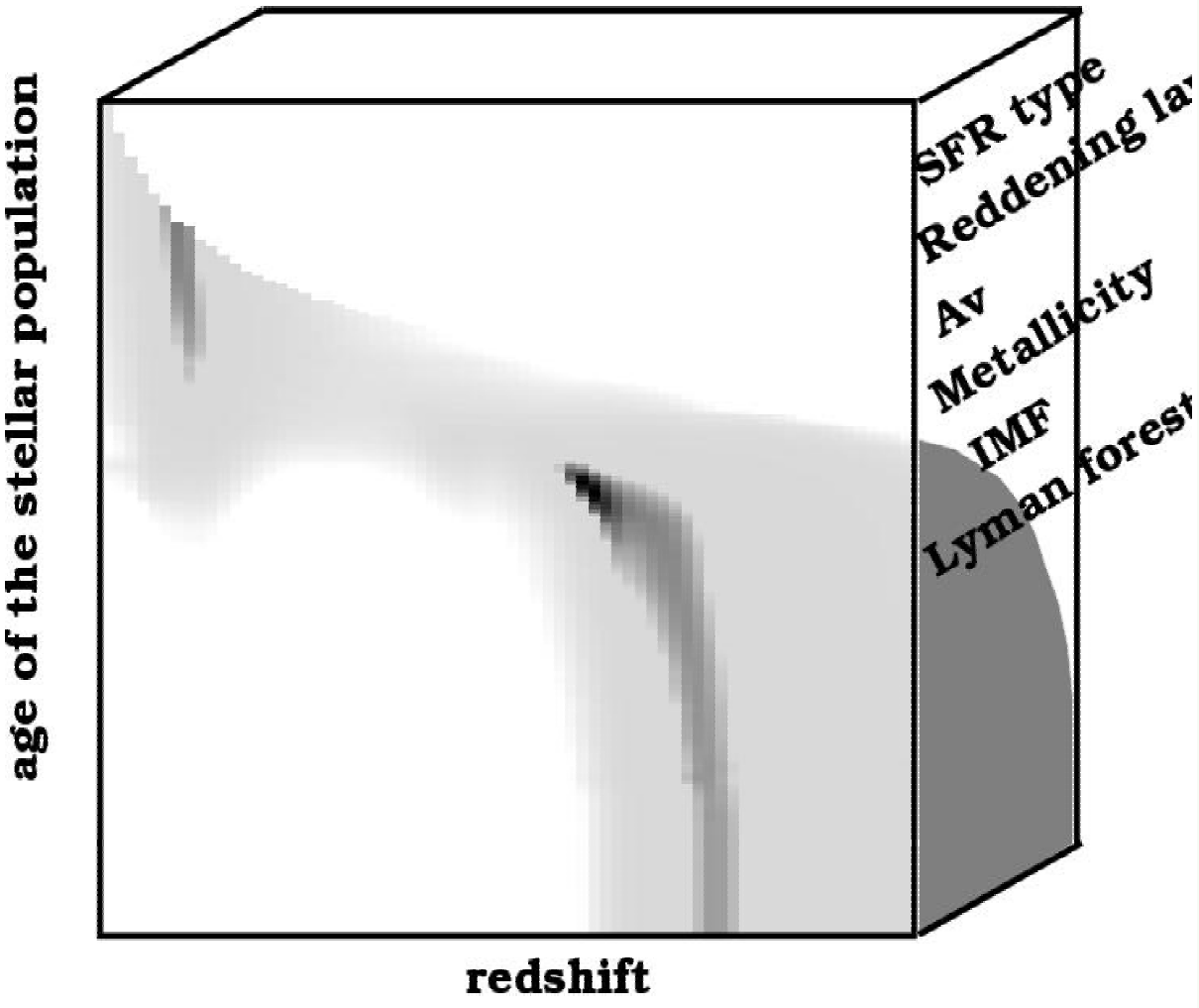


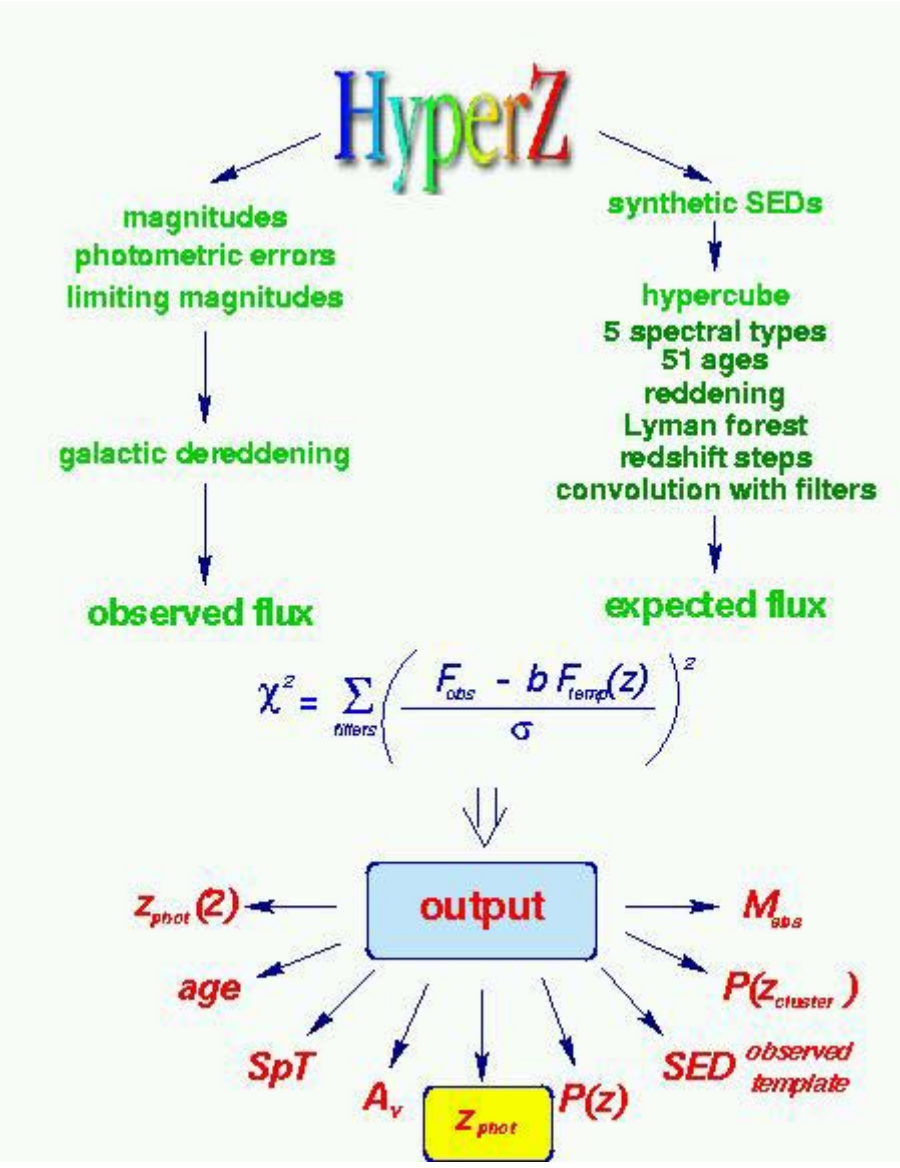




Hyperz
http://webast.ast.obs-mip.fr/hyperz

Bolzonella, Miralles & Pello 2000





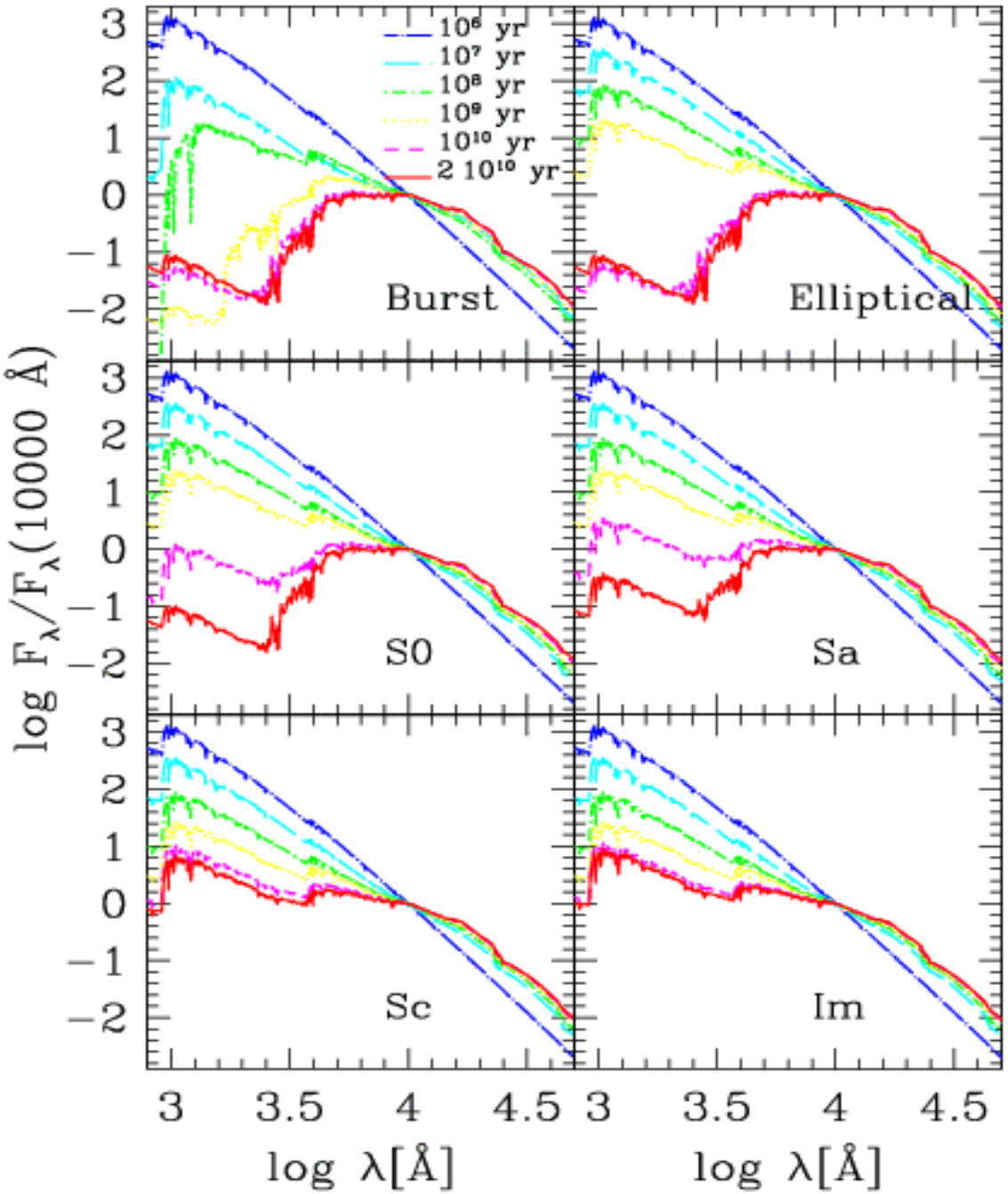
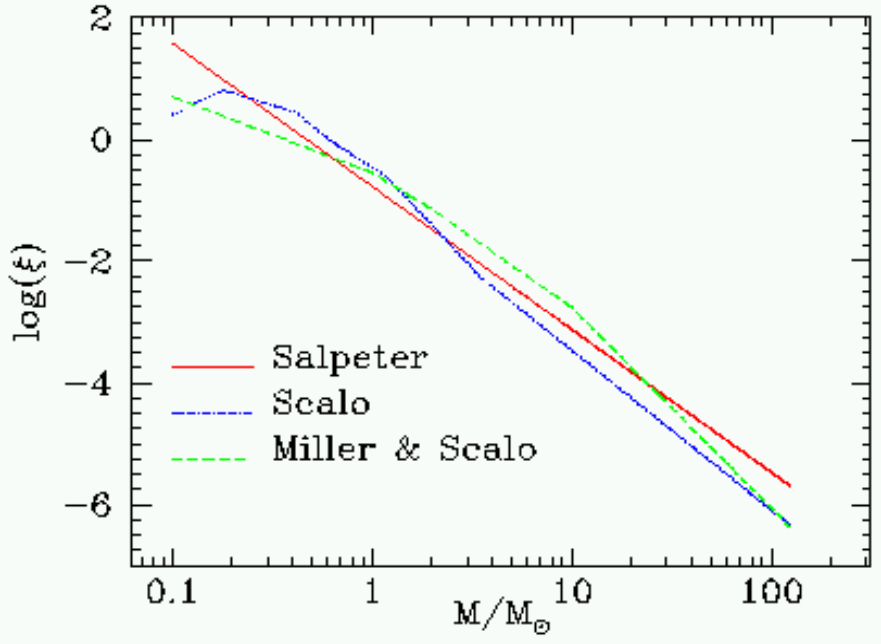


Figure 2.3: Evolution of the SEDs of different spectral types computed using the spectral evolutionary models of Bruzual & Charlot (1993), with Miller & Scalo IMF, solar metallicity and characteristics of the SFR as shown in Table 2.1.

Bolzonella 00, PhD
Bruzual & Charlot SED

Hyperz (III)

Bolzonella 00, PhD
Bolzonella et al. 2000



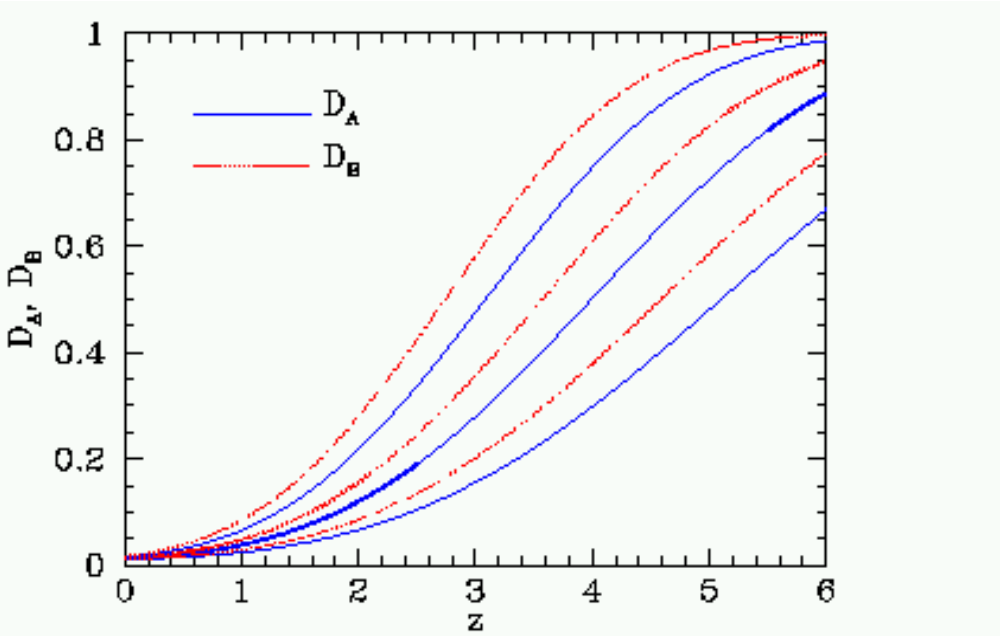
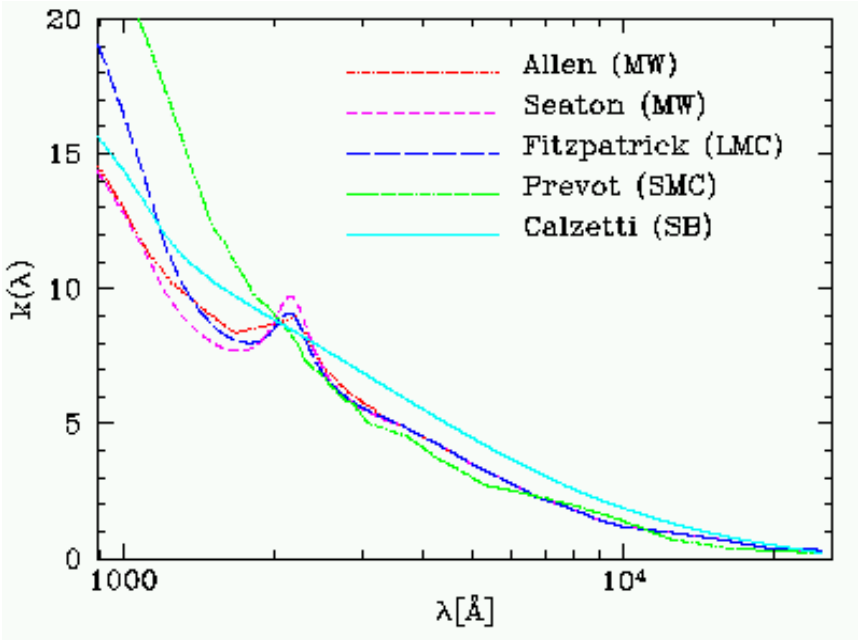


Figure 5: The depression factors D_A and D_B as function of redshift, computed by means of equations 2 and 3 prescribed by Madau (1995), for 3 different values of the optical depth: $0.5\tau_{eff}^{\alpha,\beta}$ (bottom), $\tau_{eff}^{\alpha,\beta}$ as defined in Equation 4 (middle), $2\tau_{eff}^{\alpha,\beta}$ (top).



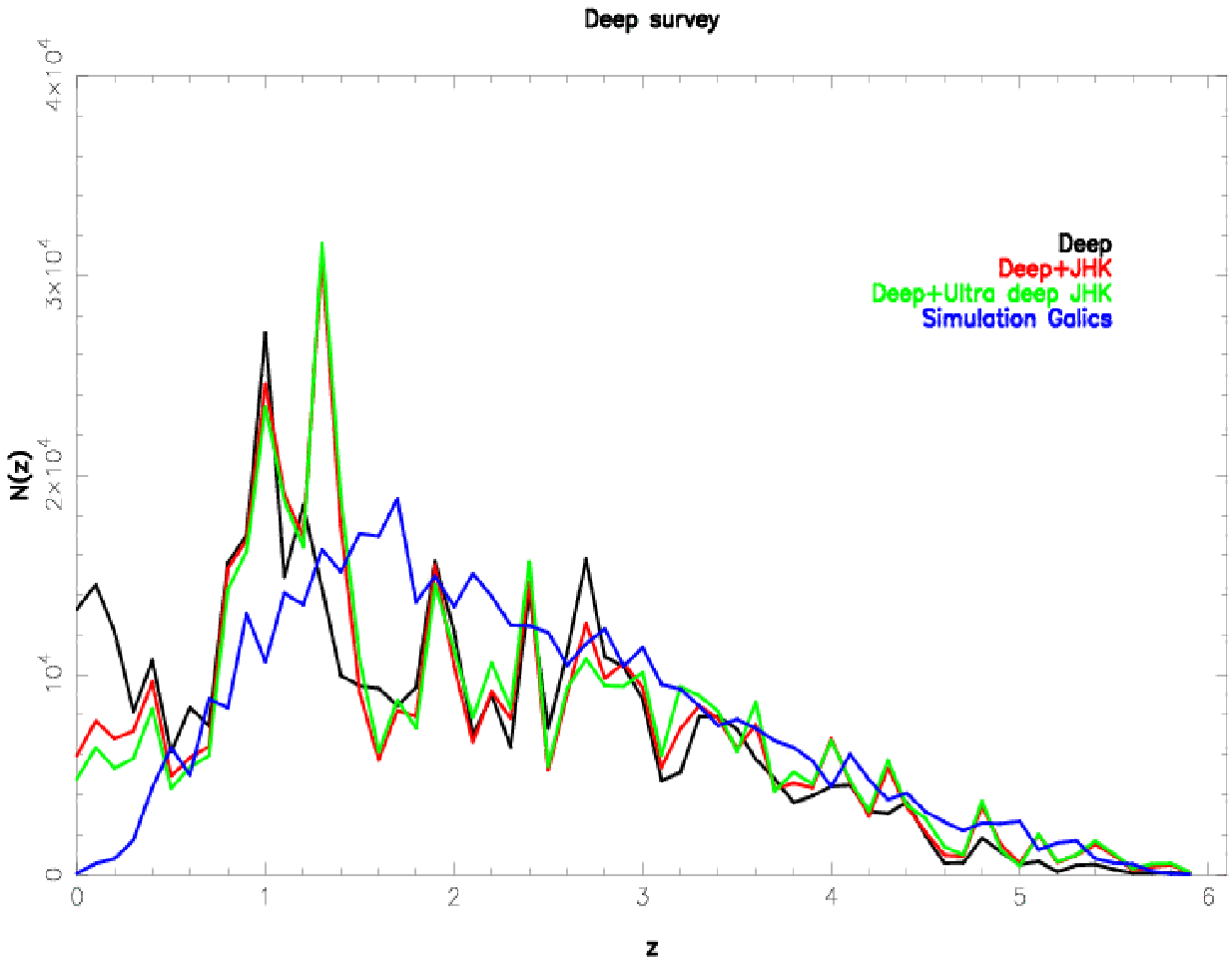
+Simulation de mock catalogues

+Separation galaxie/étoile/qso

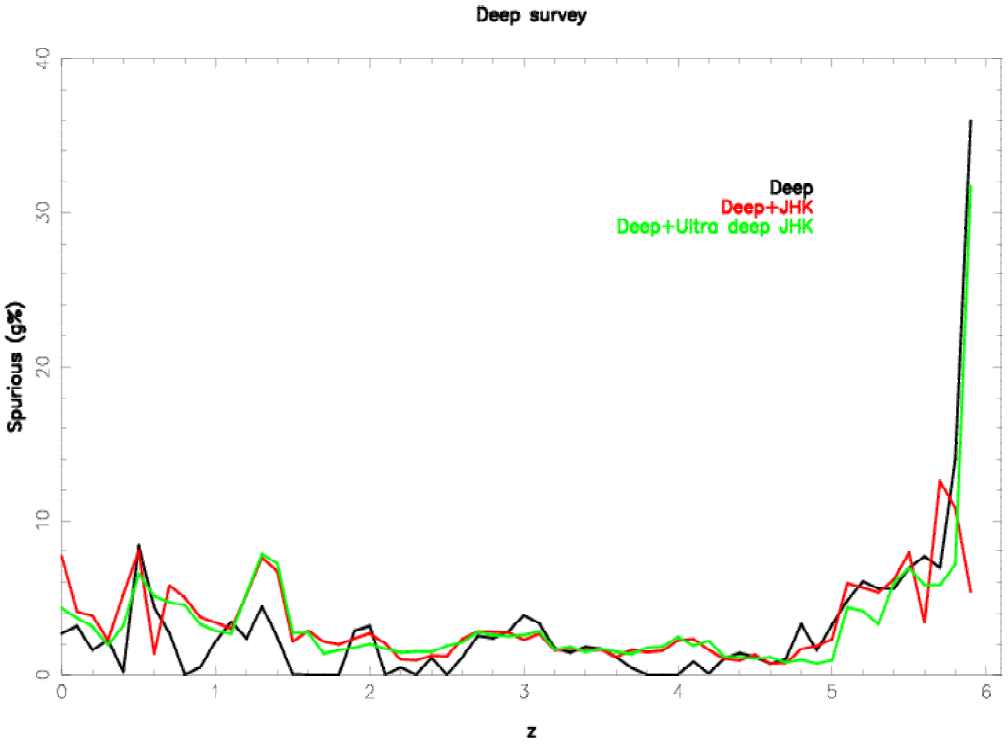
Expected zphot Performances using Simulations

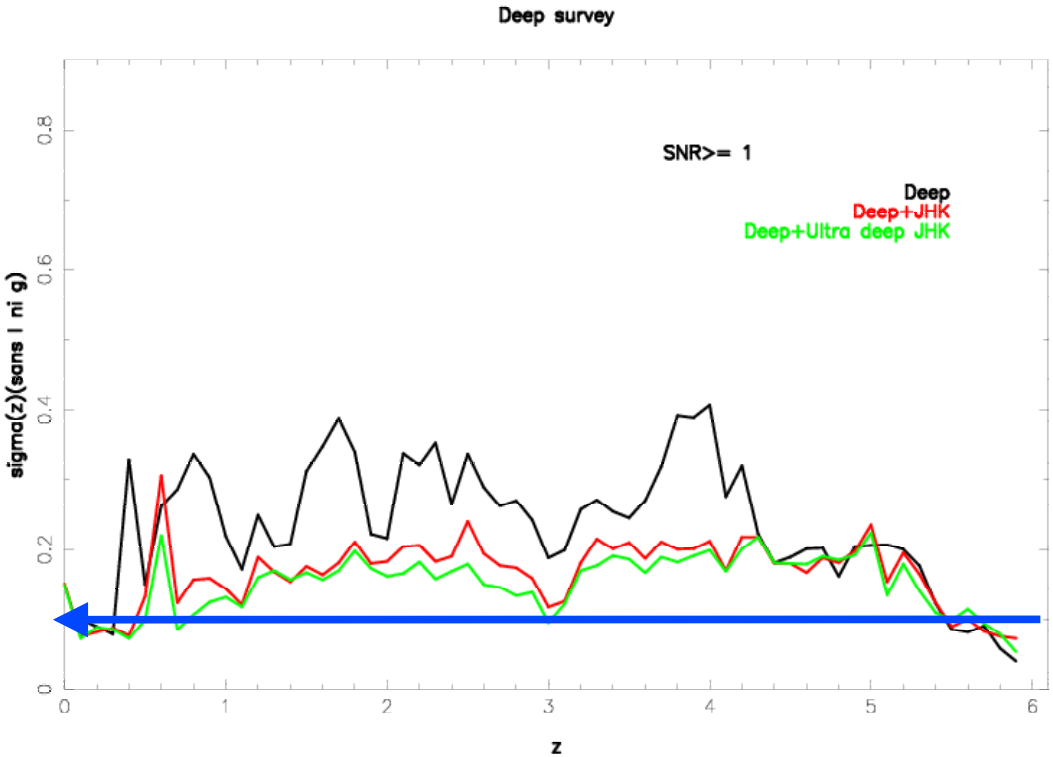
The GalICS Project

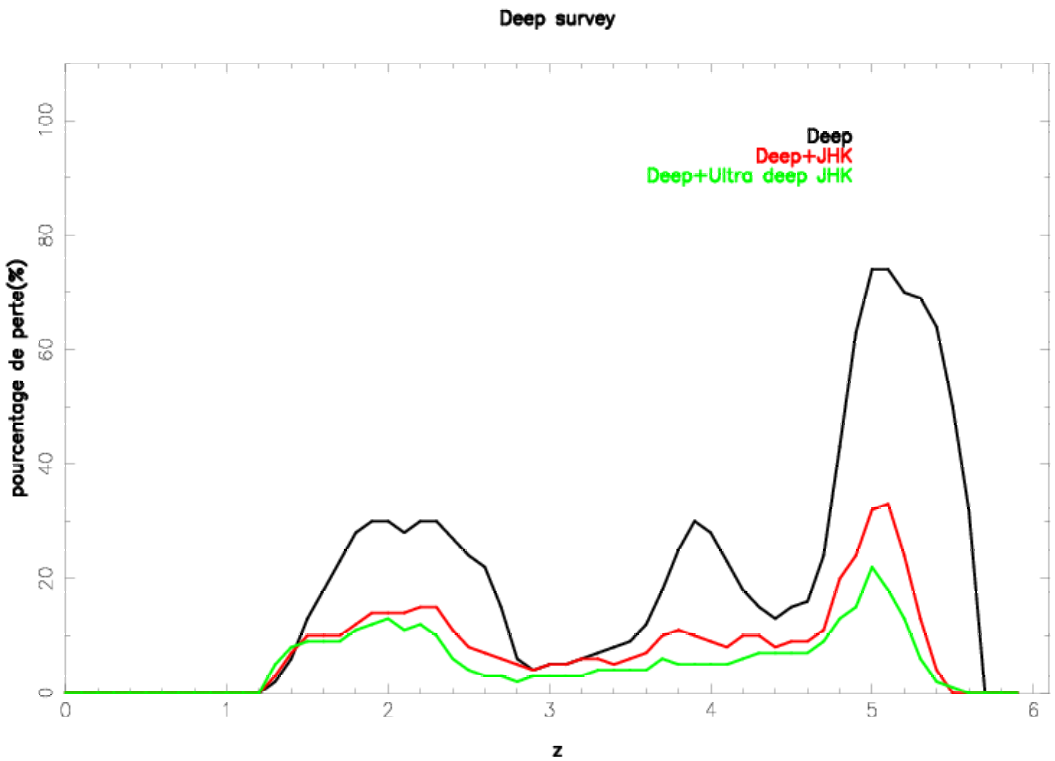
http://galics.iap.fr/



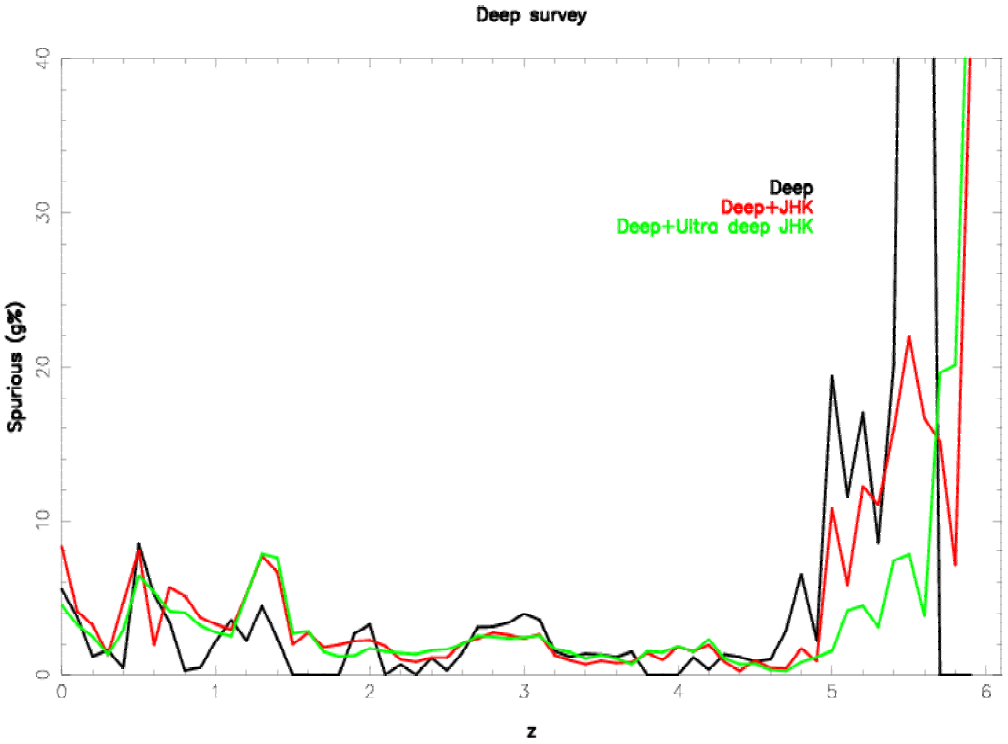
- Simulation ~400.000 to 500.000 objects
- magnitude distribution and S/N(magnitude) similar to CFHTLS & WIRCAM Surveys
- Only objects "detected" in 3 filters at least (S/N>1) are considered to compute z_phots

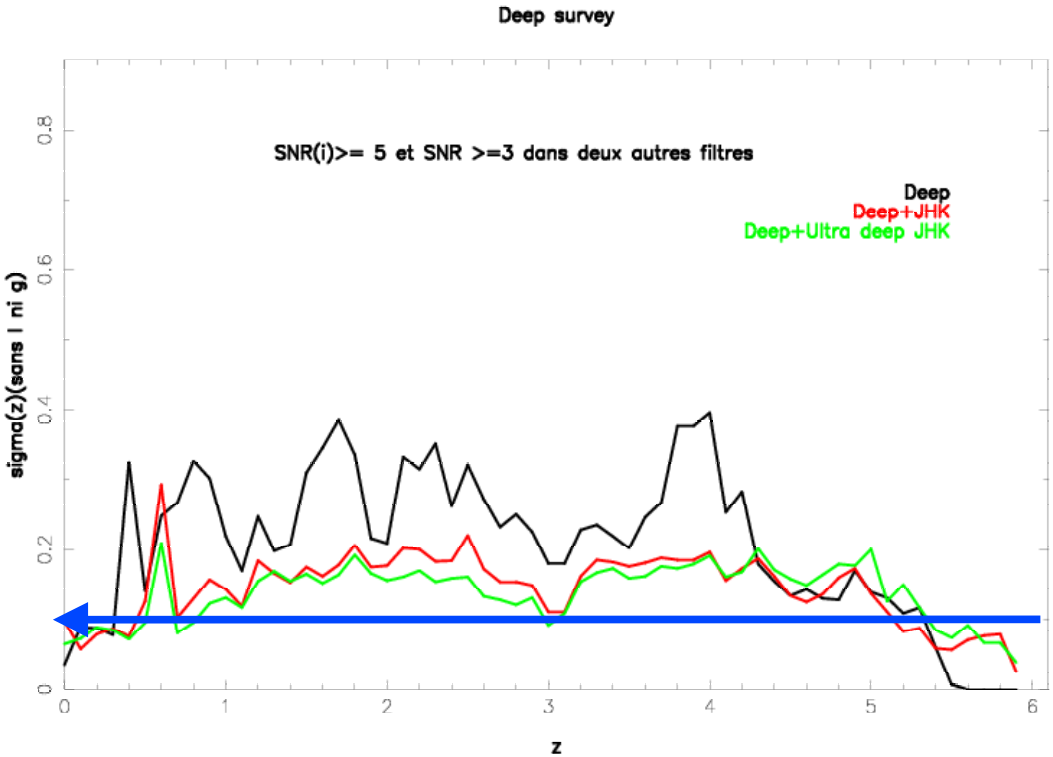


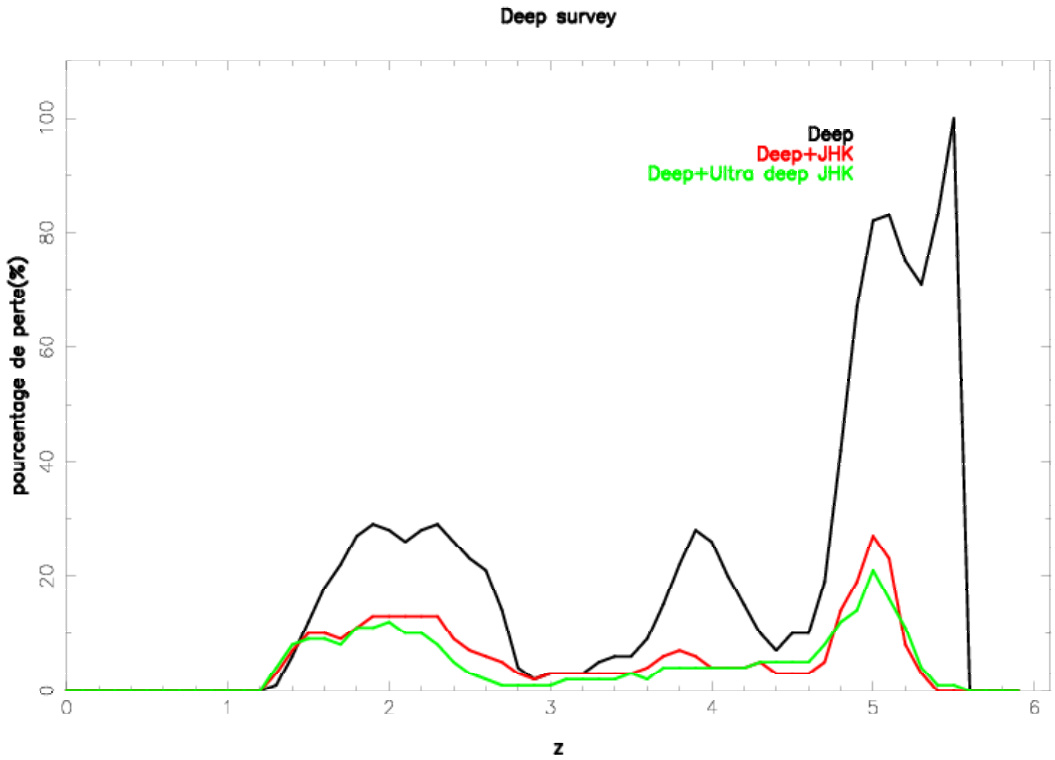




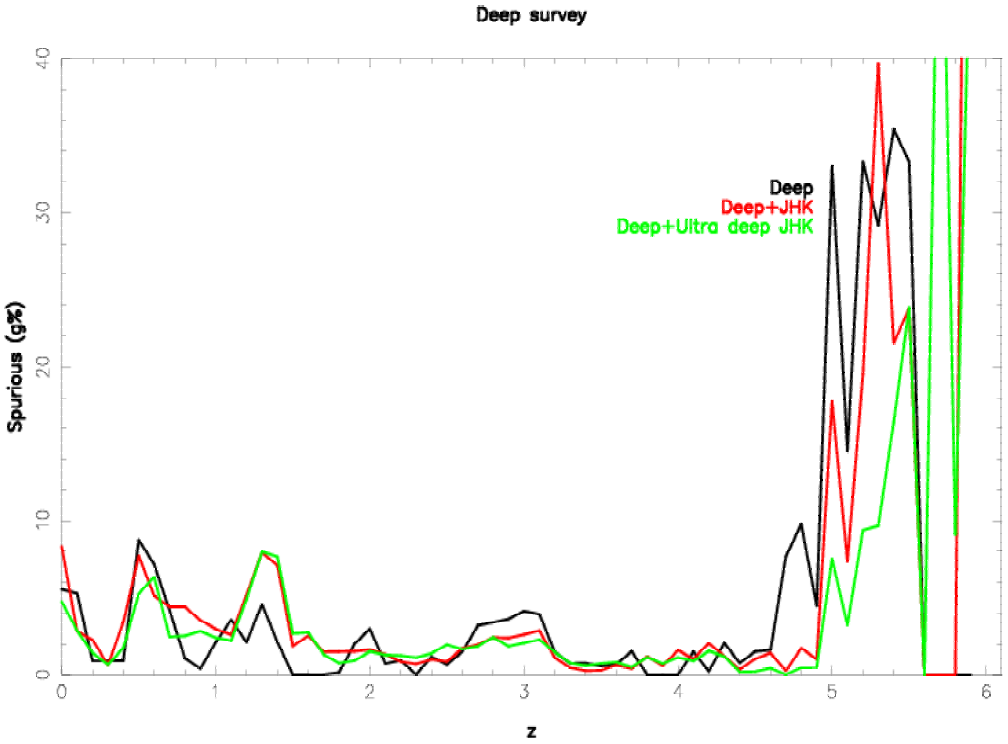
S/N >~1 in at least 3 filters

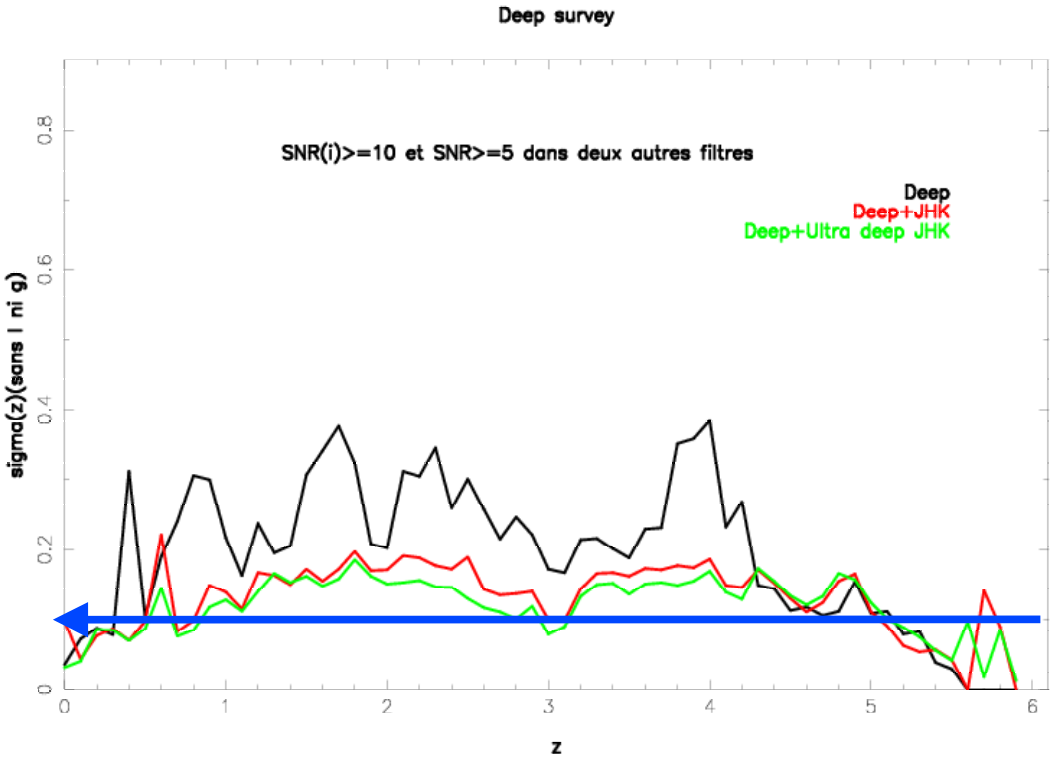


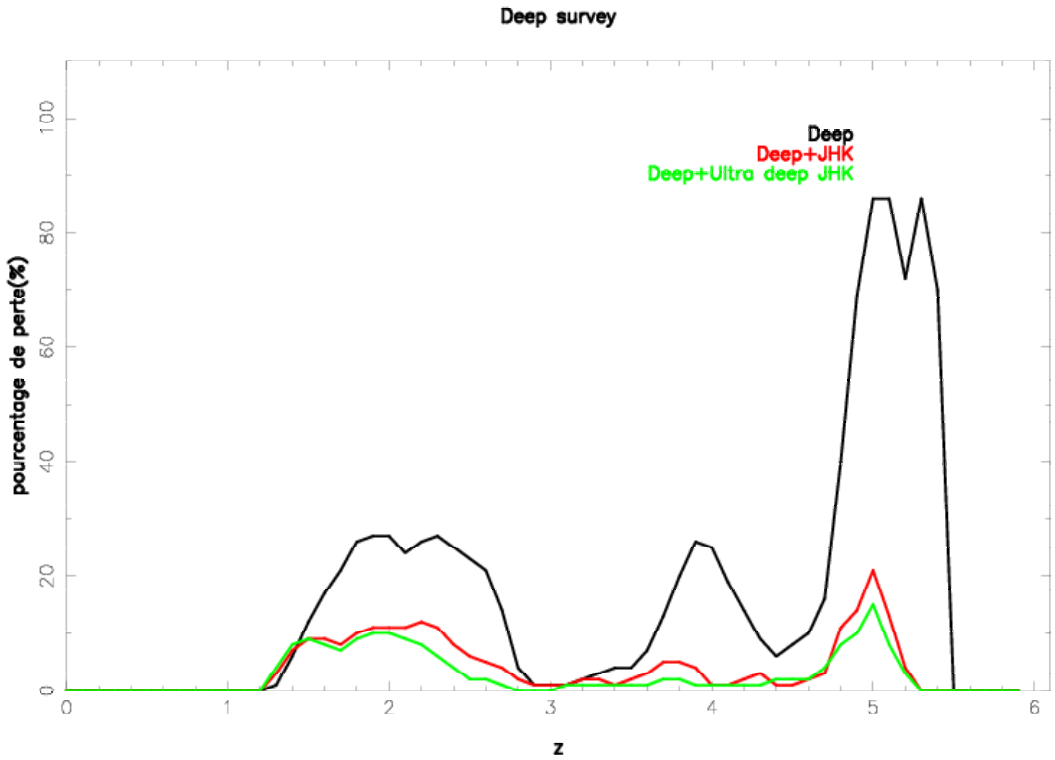




S/N (i)>~5 AND S/N>~3
in at least 2 other filters



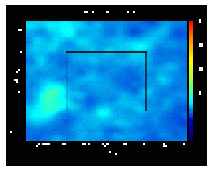




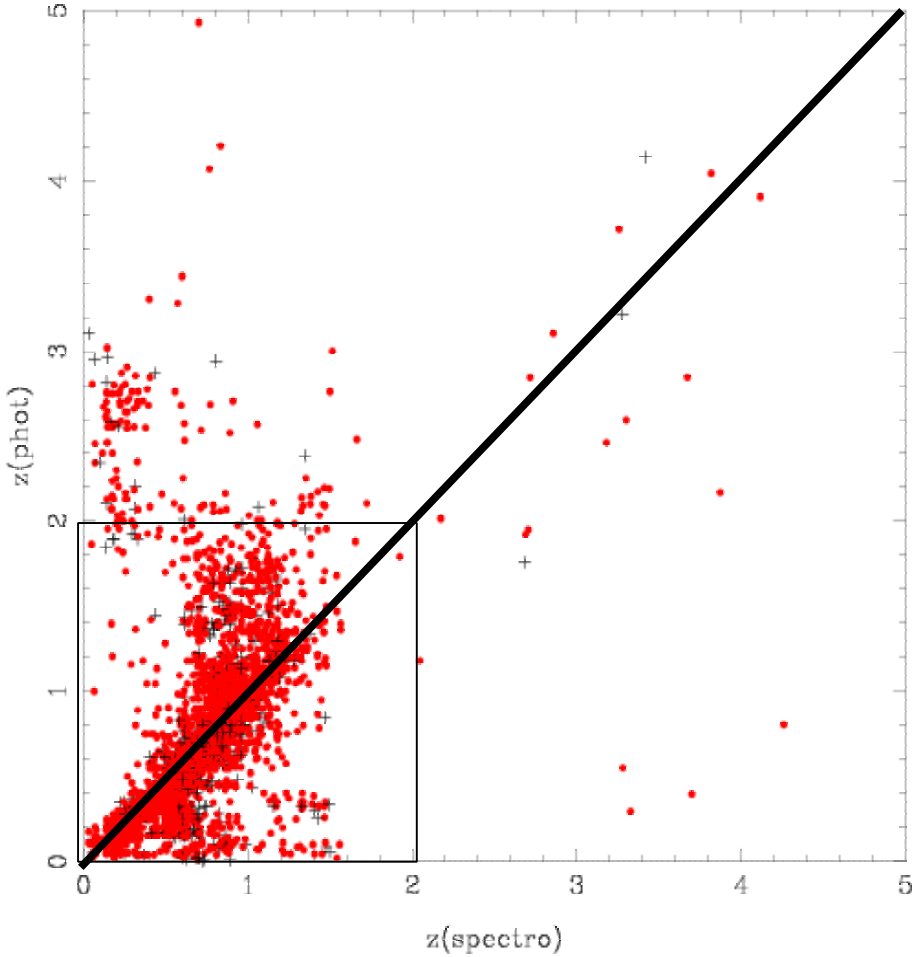
S/N (i)>~10 AND S/N>~5
in at least 2 other filters

Performances: z_photom vs. z_spectroscopique (D1)

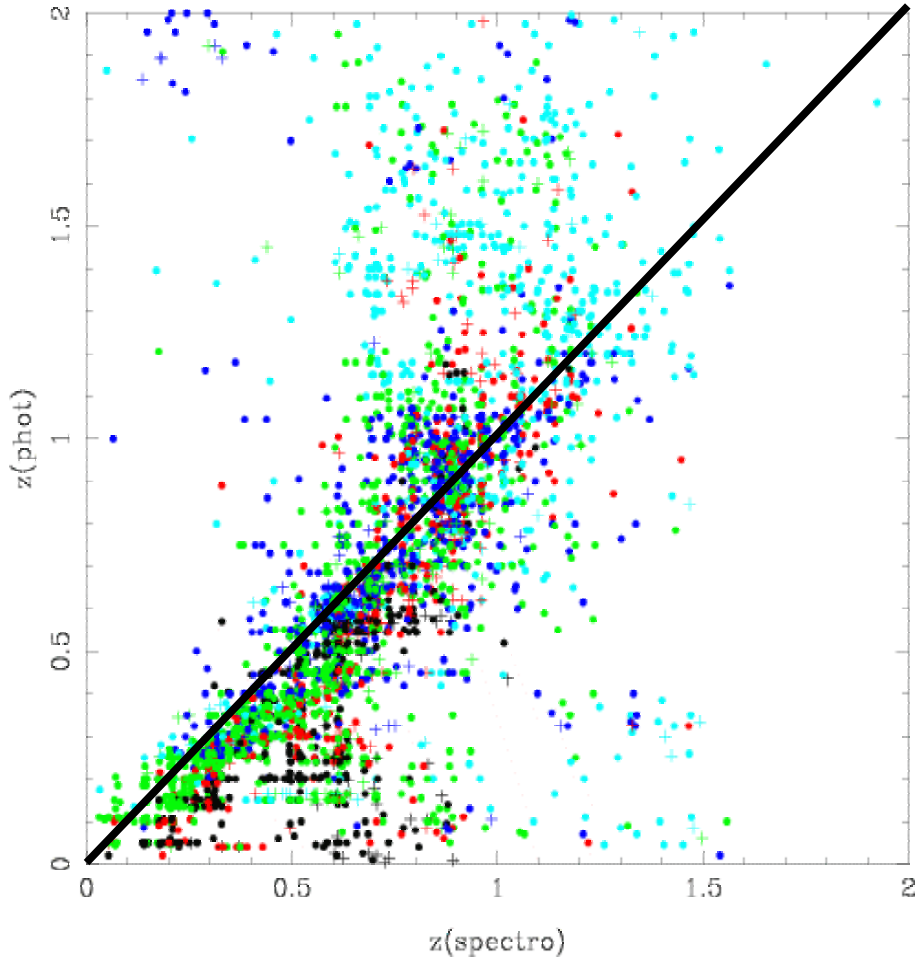
Type 1: E/S0
Type 2: Sbc
Type 3: Scd
Type 4: Im
Type 5: SB



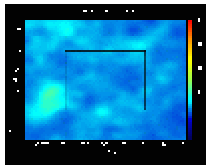
VVDS-2h field

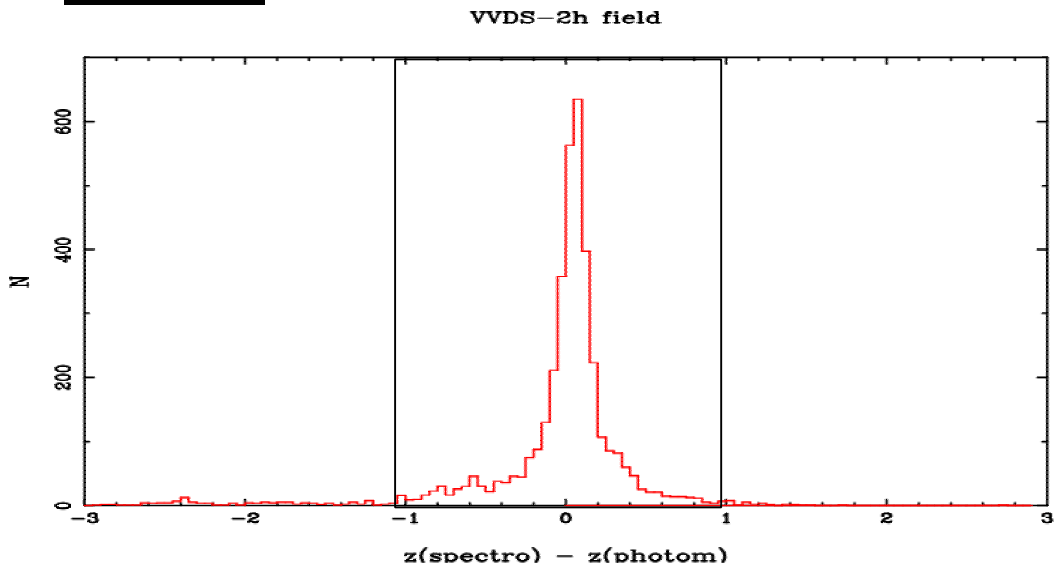


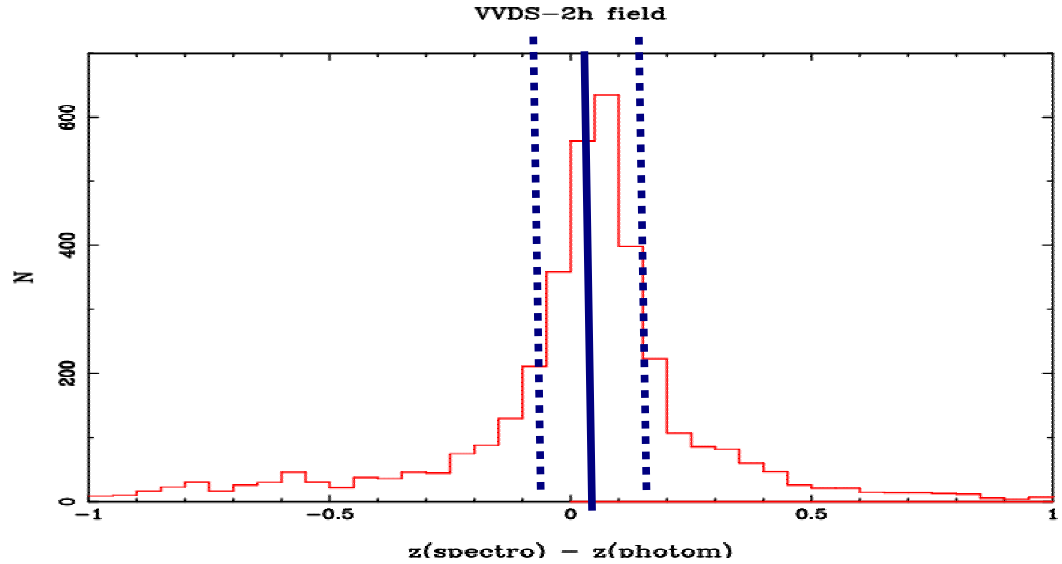
VVDS-2h field



Performances: z_photom vs. z_spectroscopique (D1)







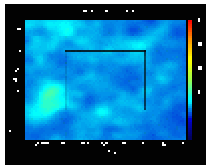
3860 Objects:

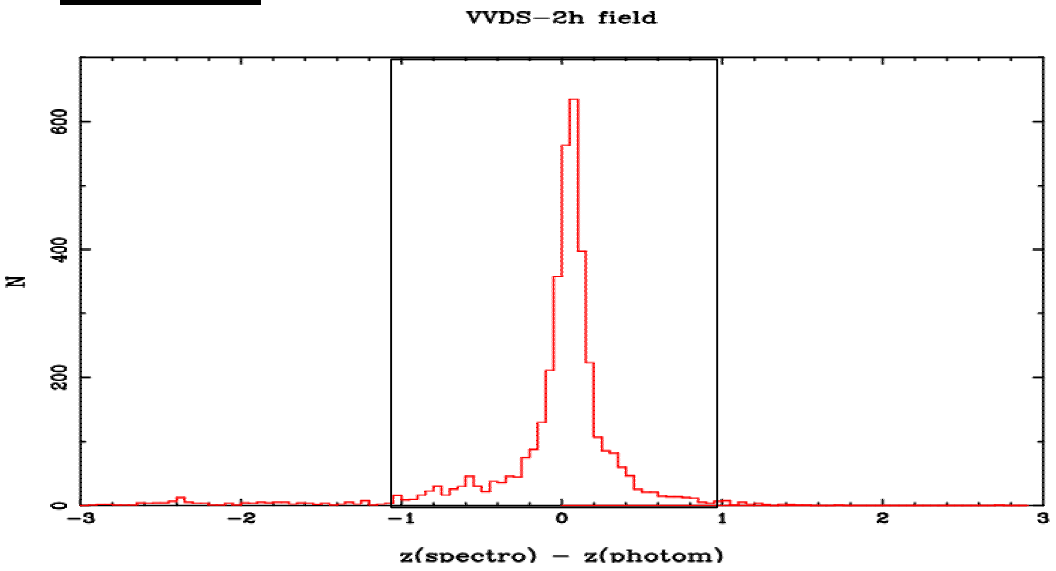
dz~ 0.03 --> slight shift

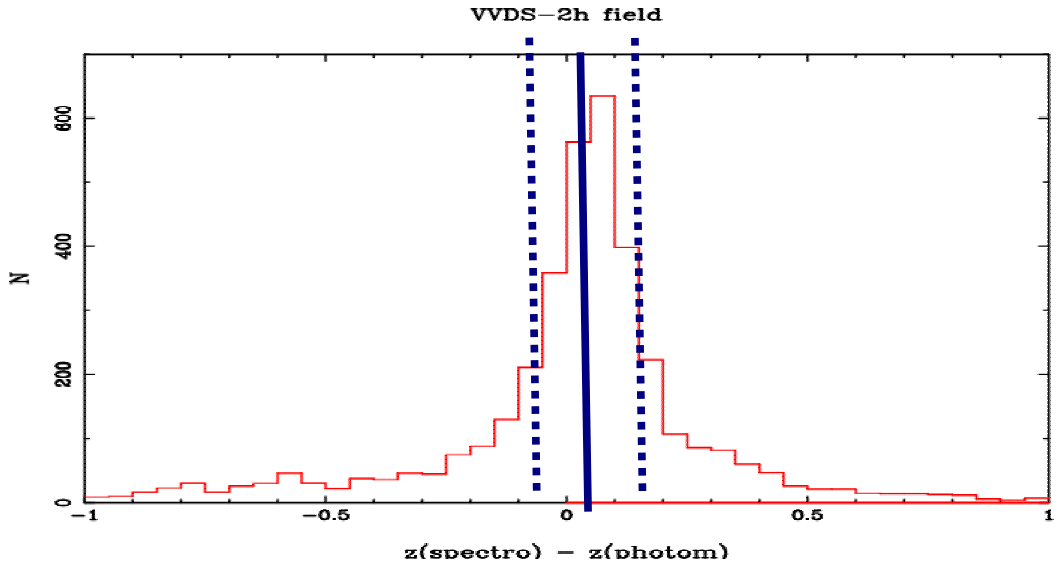
Redshift interval / sigma(z)

[0,5] all	0.16
[0,0.3]	0.07
[0.3,0.6]	0.11
[0.6,0.9]	0.17
[0.9,1.2]	0.20
[1.2,1.5]	0.19

Performances: z_photom vs. z_spectroscopique (D1)







3860 Objects:

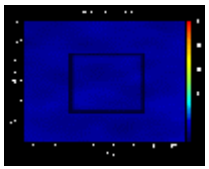
Type 1: E/S0
Type 2: Sbc
Type 3: Scd
Type 4: Im
Type 5: SB

As a function of types

Redshift interval / sigma(z)

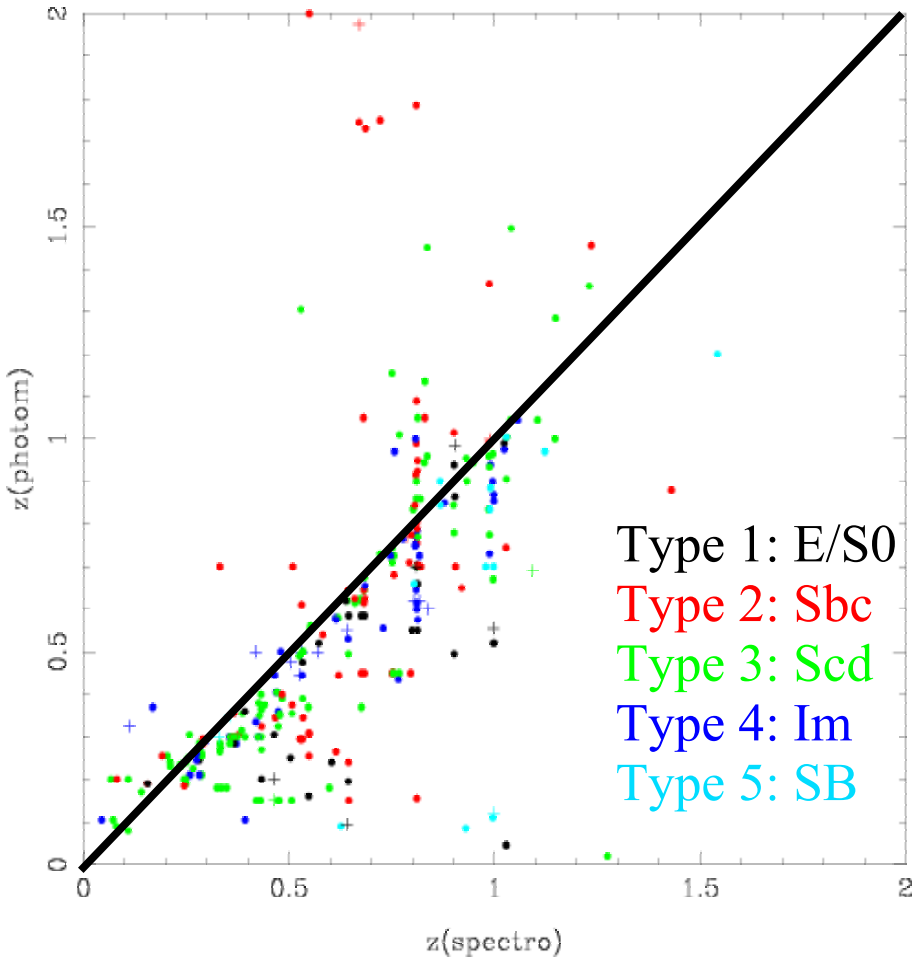
[0,5] 0.16 (all)/
0.14/0.14/0.15/0.12/0.211
[0,0.3] 0.07
0.04/0.06/0.05/0.08/0.05
[0.3,0.6] 0.11
0.12/0.10/0.09/0.08/0.14
[0.6,0.9] 0.17
0.13/0.15/0.19/0.14/0.23
[0.9,1.2] 0.20
0.19/0.15/0.21/0.14/0.22
[1.2,1.5] 0.19
-- /0.33/0.20/0.10/0.18

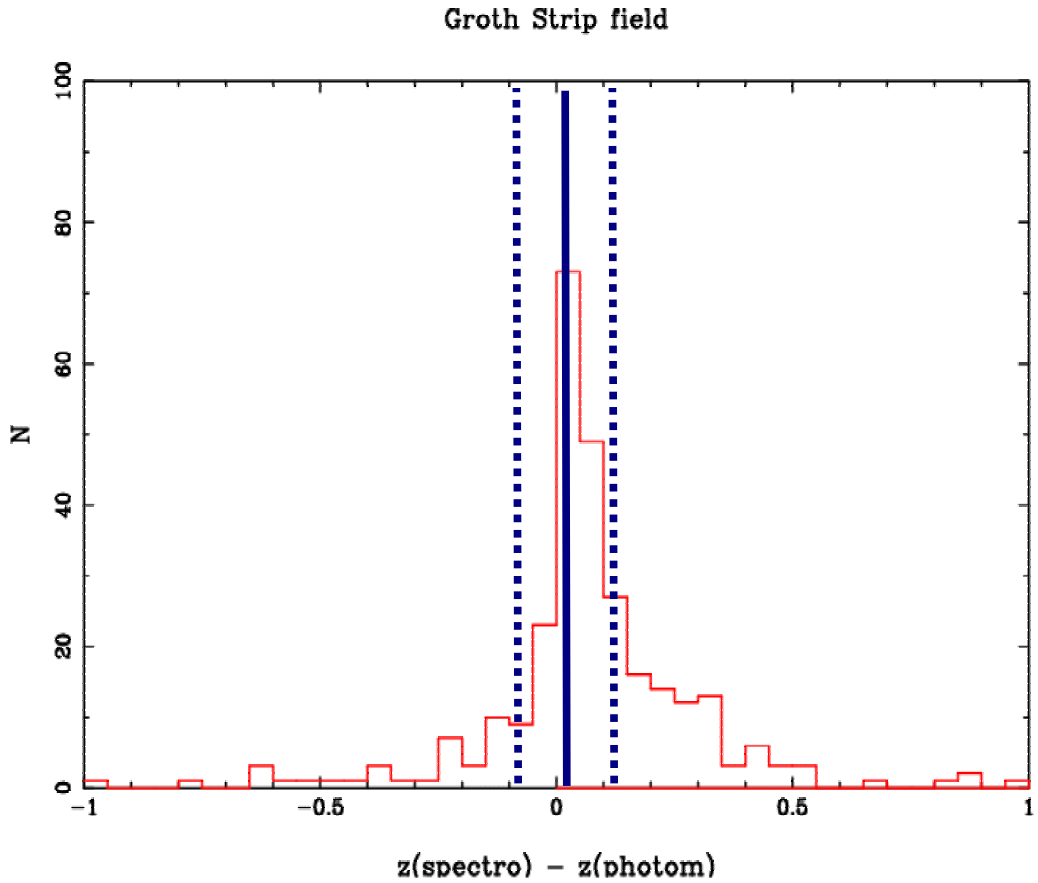
Performances: z_photom vs. z_spectroscopique (D3)



314 Objects:

dz~ 0.07 --> slight shift





Performances: z_photom vs. z_spectroscopique (D3)

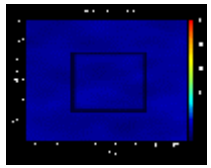
314 Objects:

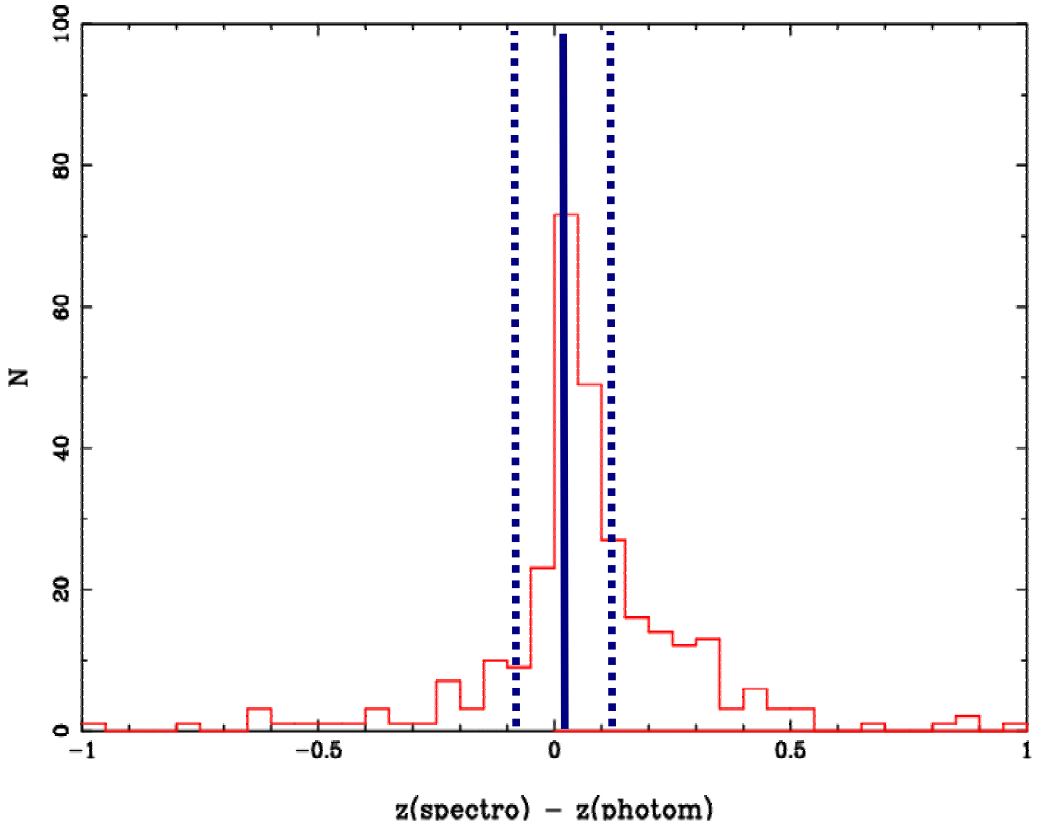
dz~ 0.07 --> slight shift

Redshift interval / sigma(z)

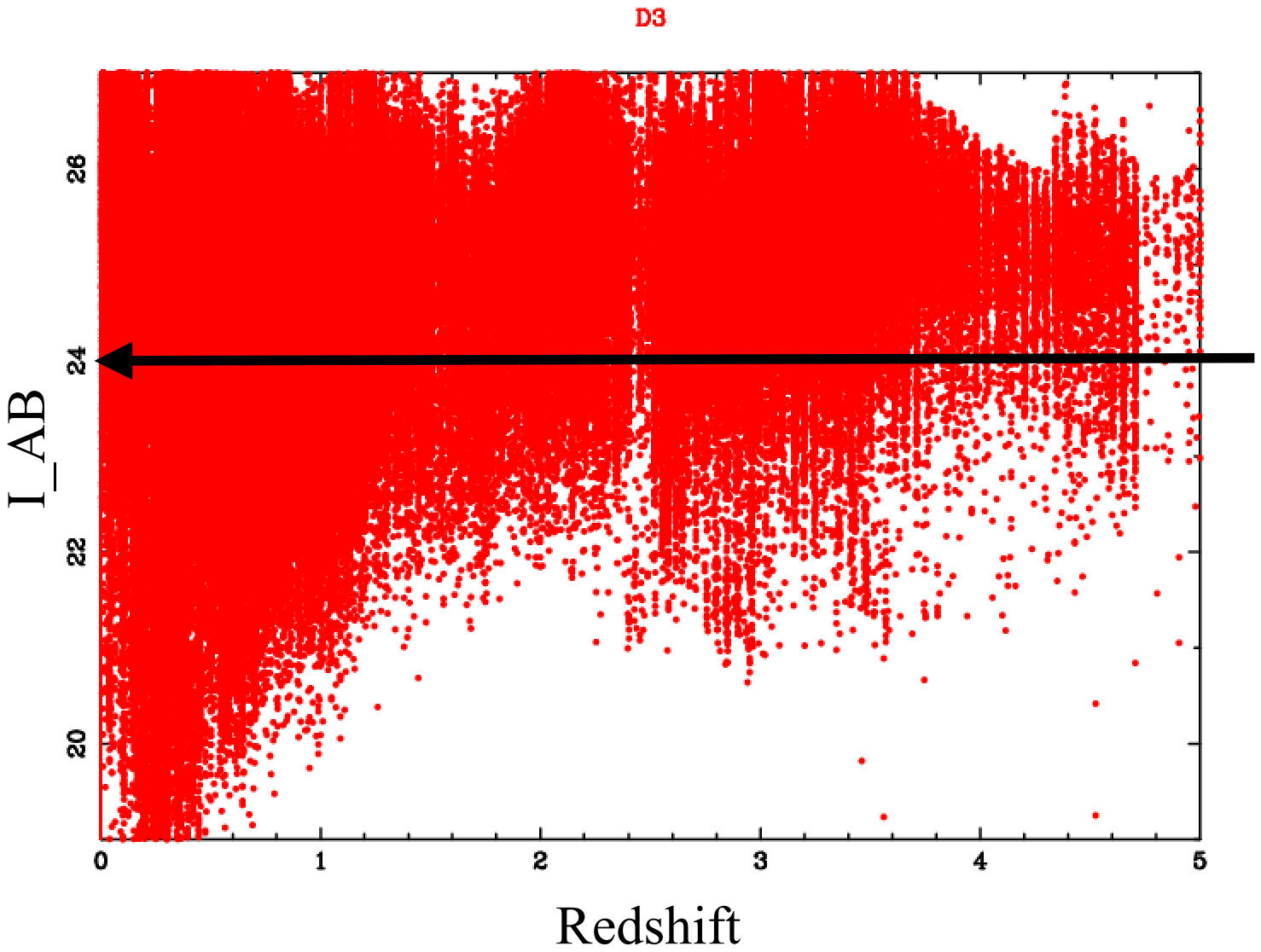
[0,5] all	0.14
[0,0.3]	0.06
[0.3,0.6]	0.11
[0.6,0.9]	0.17
[0.9,1.2]	0.19
[1.2,1.5]	0.05 (N=2!)

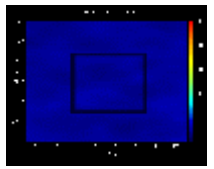
--> Same accuracy in D1





N(z): Magnitude selected samples

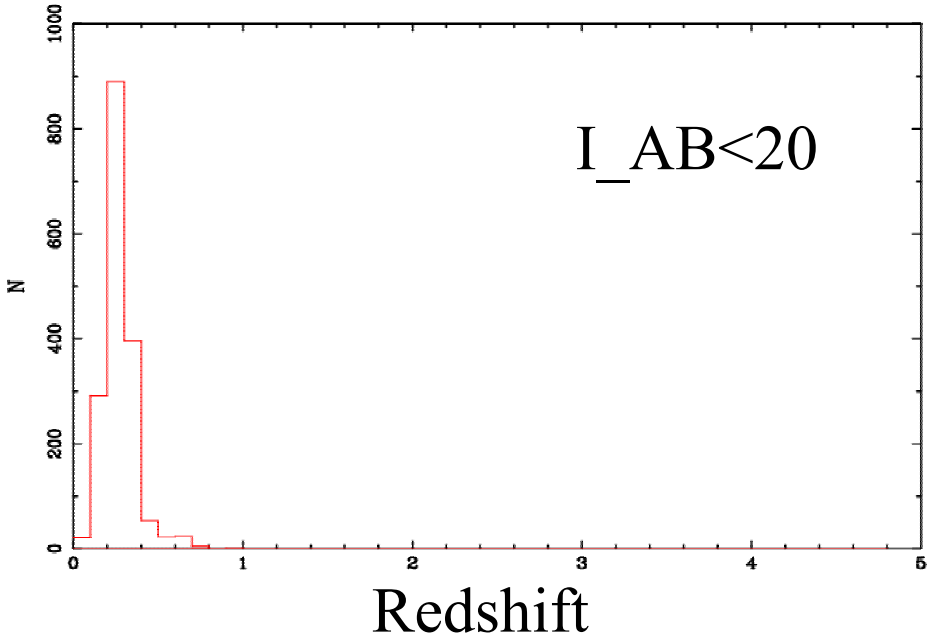


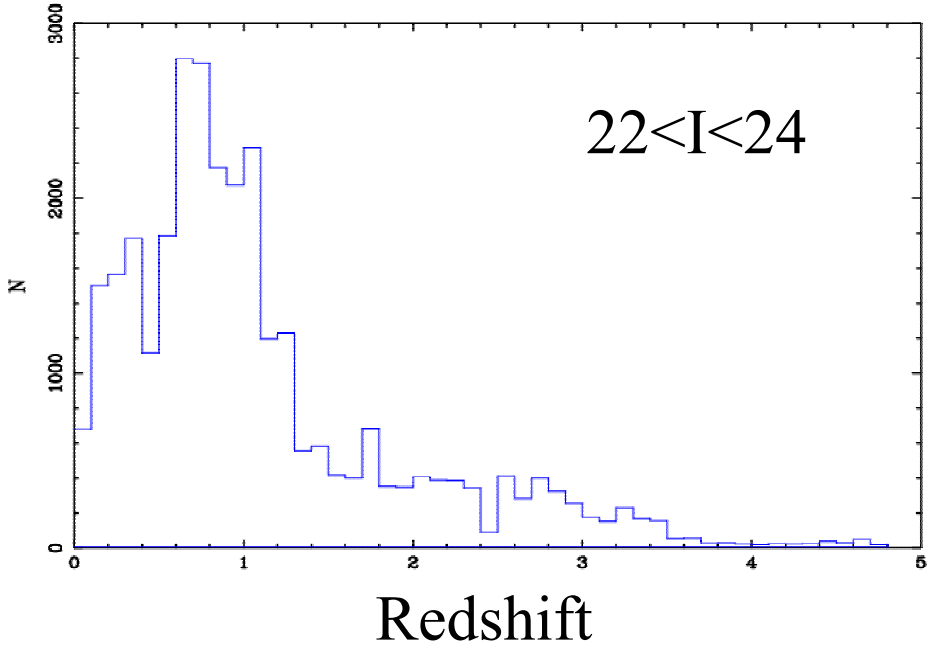


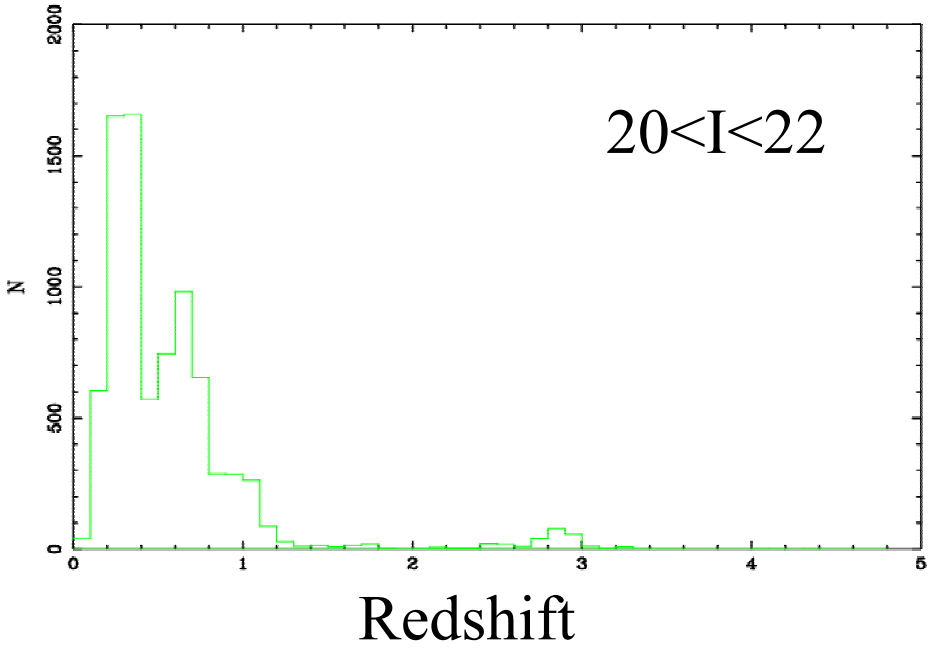
D3

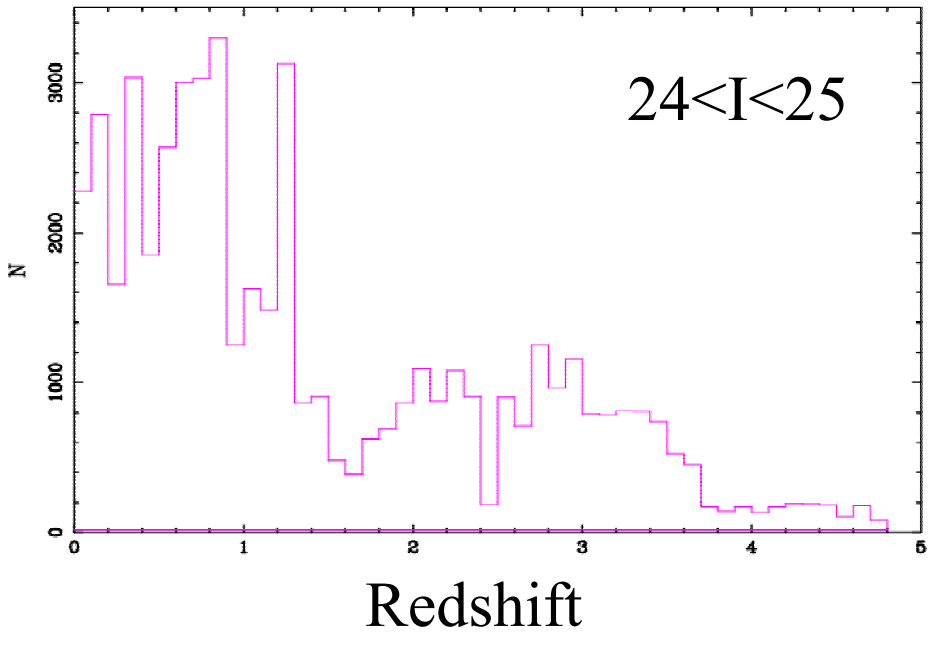
Spectroscopic training sets

N(z): Magnitude selected samples

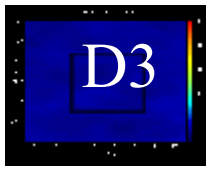


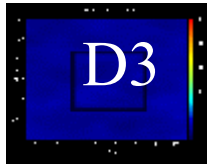


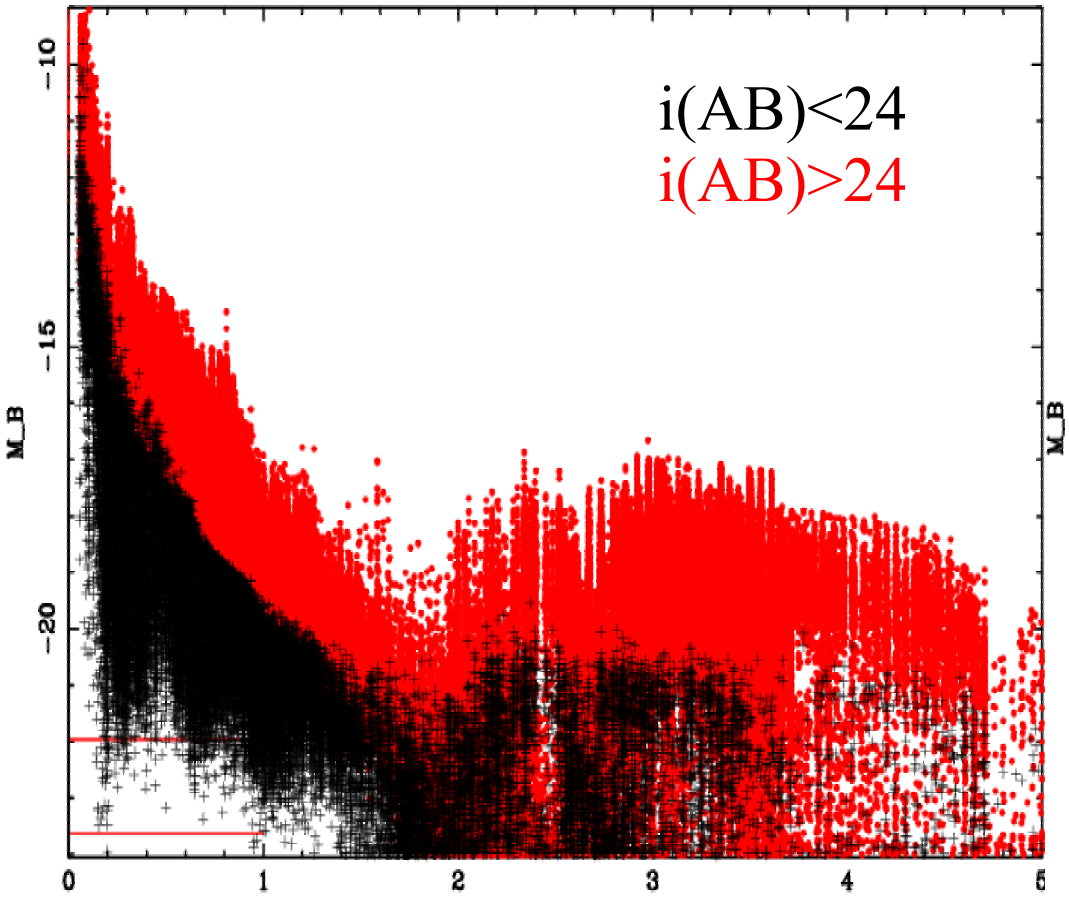




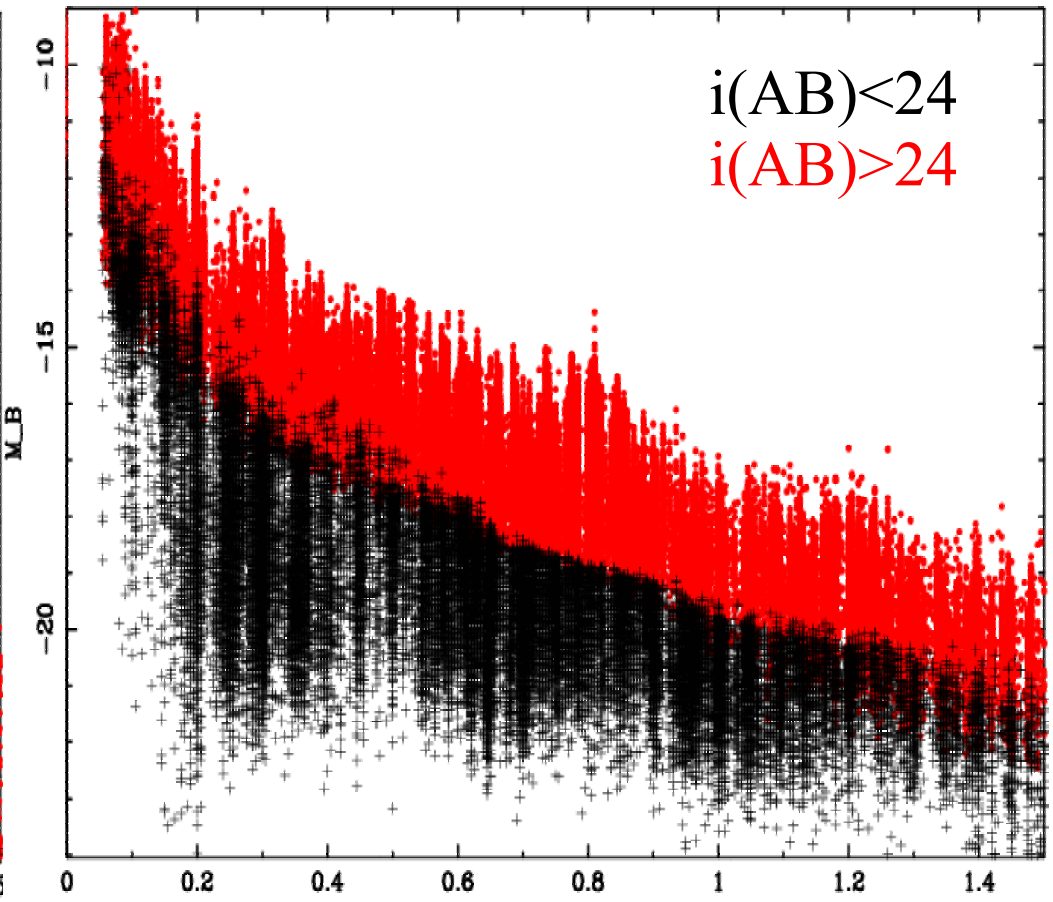
Luminosity Functions, etc...





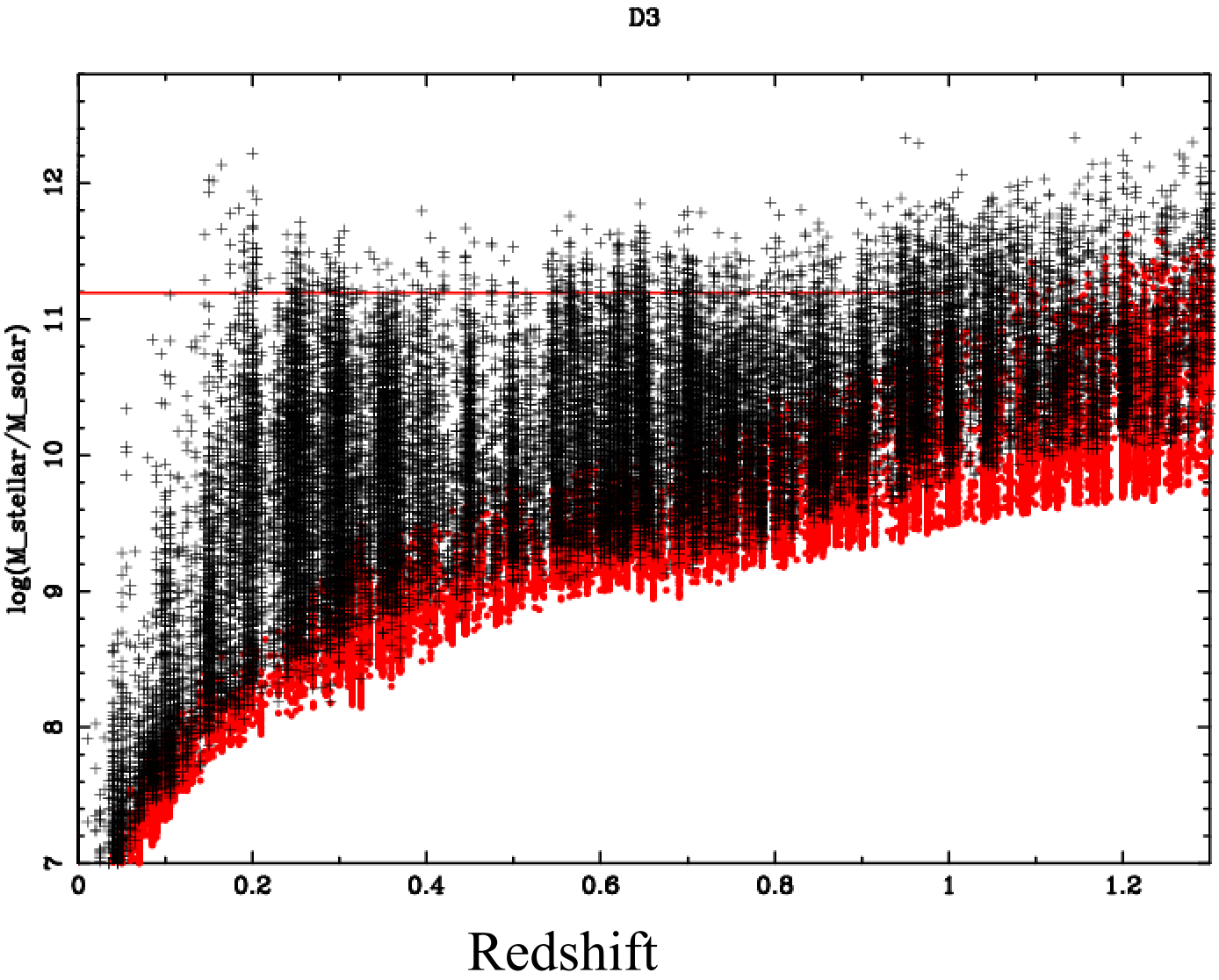


Redshift



Redshift

Stellar Masses

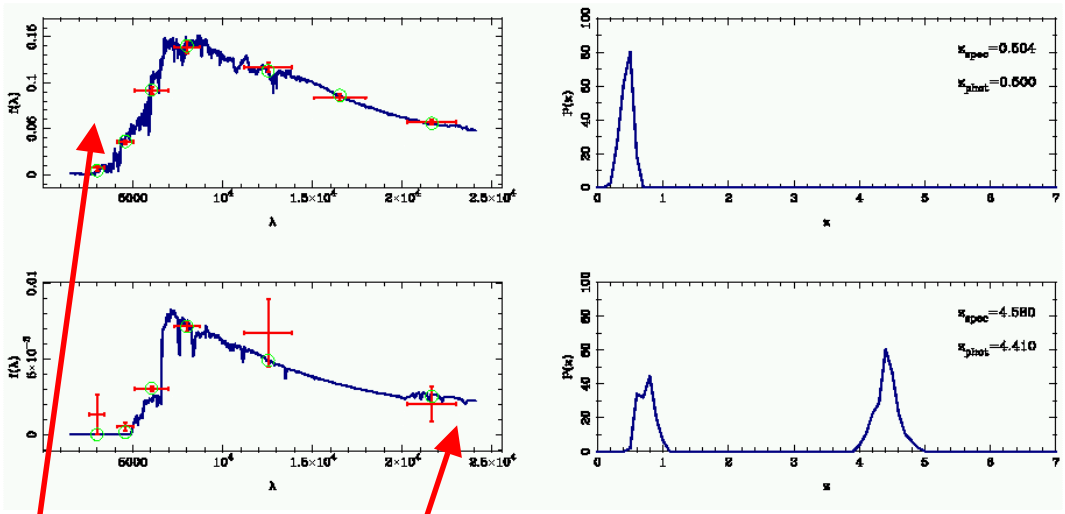


Example: D3
i(AB)>24 &
i(AB)<24(+)
with S/N(z)>3

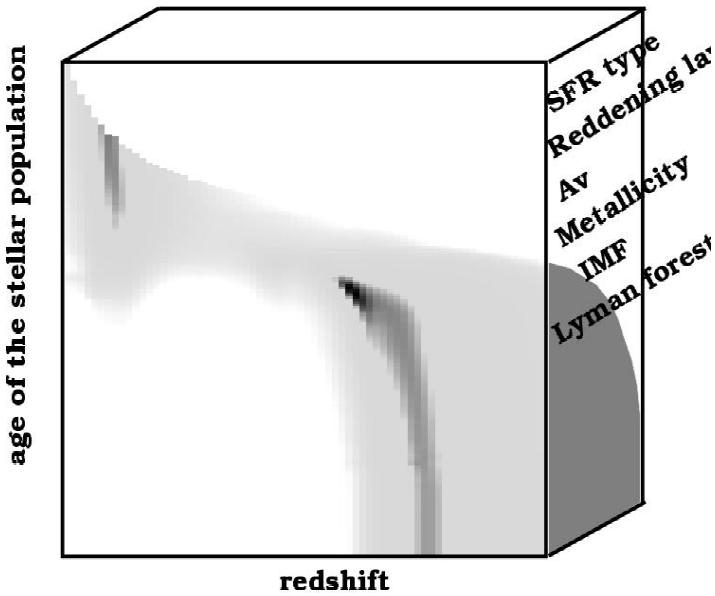
Properties of galaxies versus environment

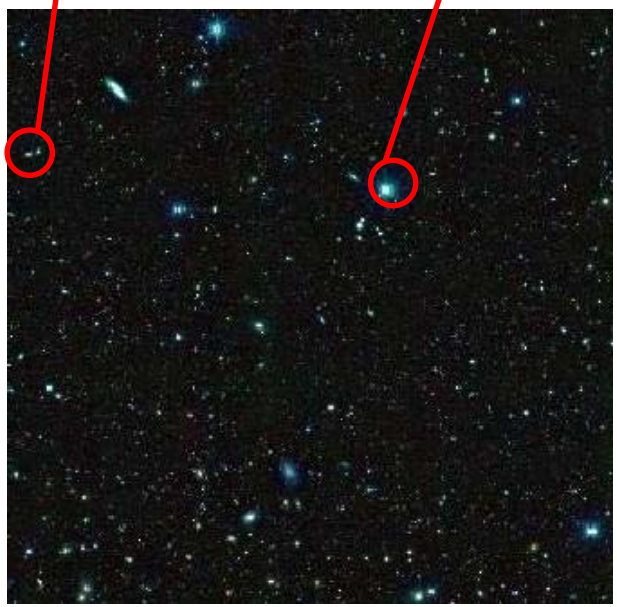
SED

P(z)

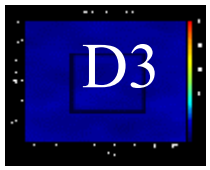


« hypercube »

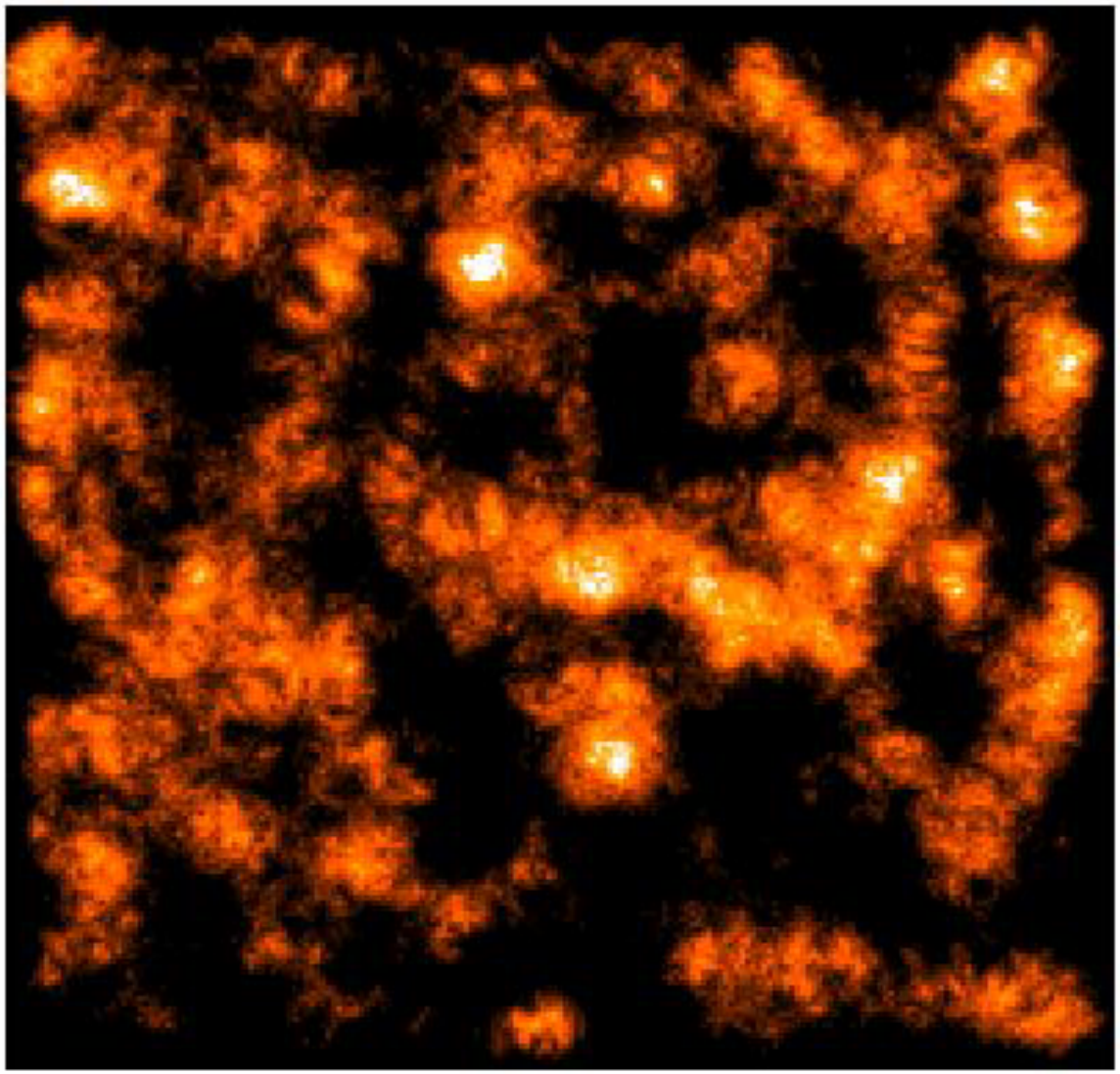


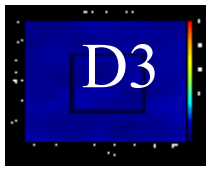


- Object: (□, □, P(z))
- «Local density » estimators
- Spectroscopic information for the “brightest” galaxies



Number density
z=[0.35,0.45]
33x33 arcmin2





Number density
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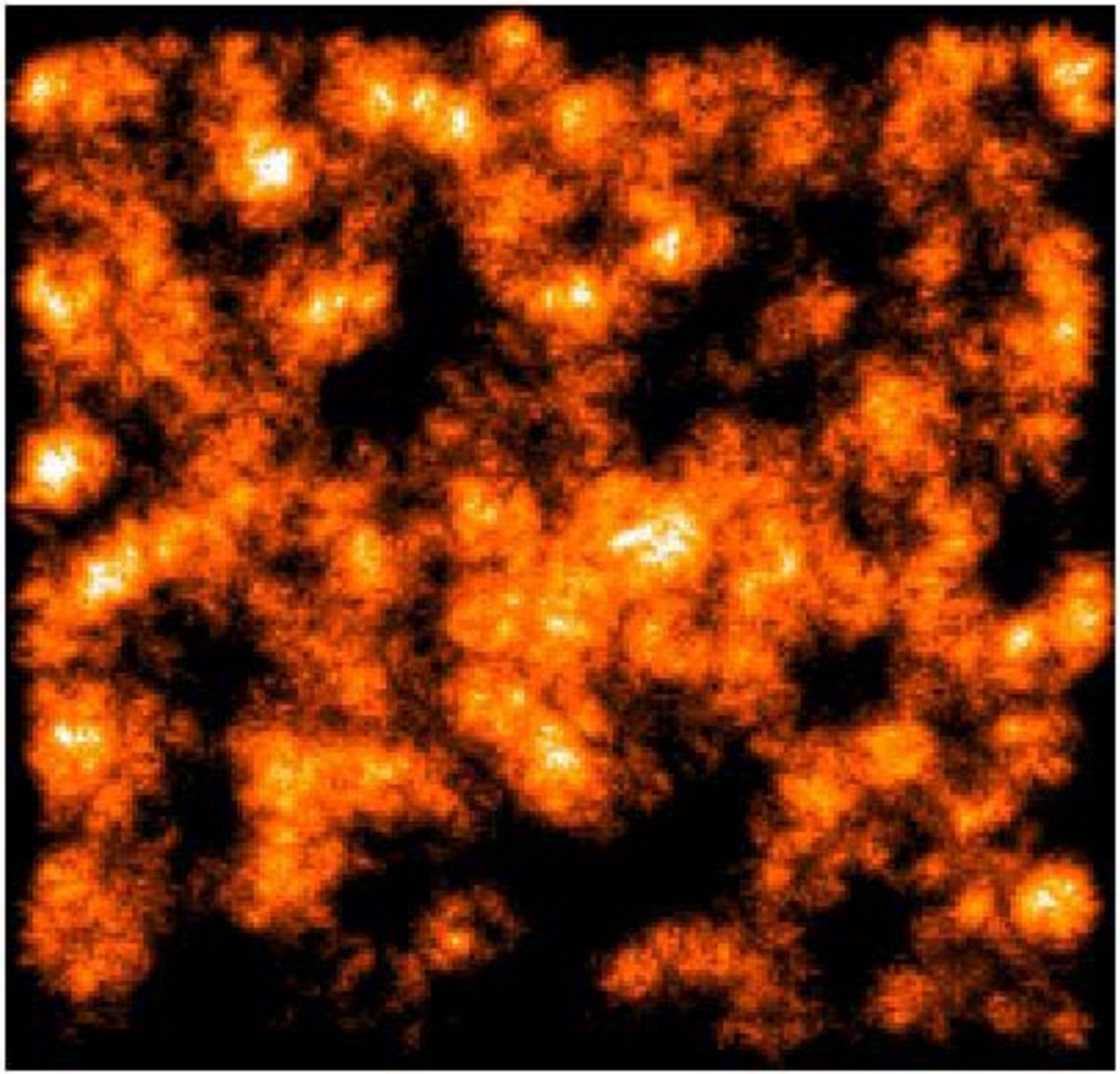
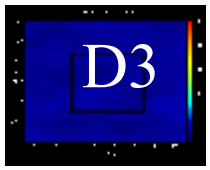
33x33 arcmin2





Number density
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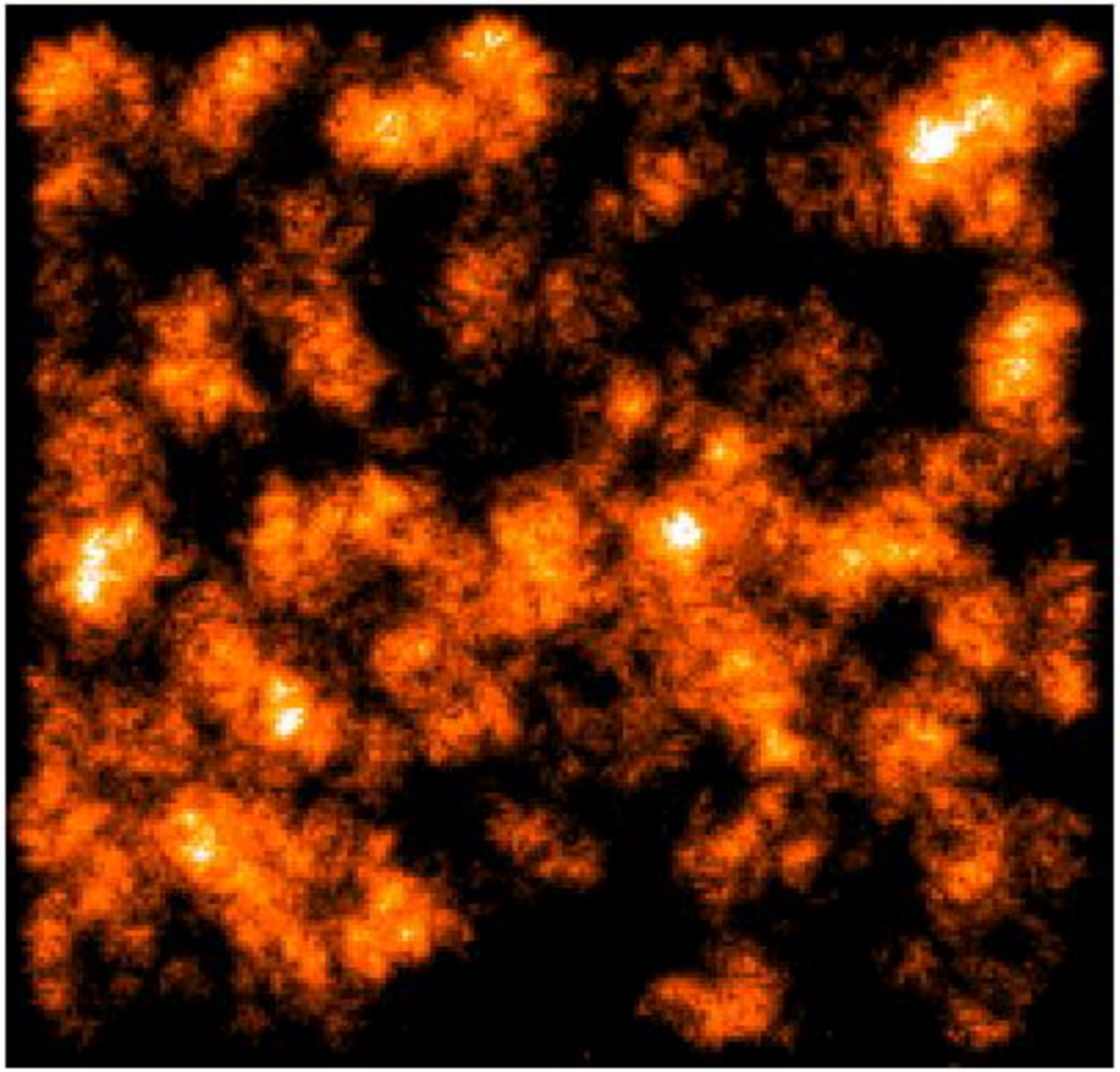
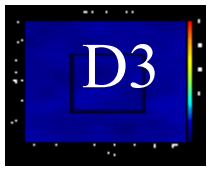
33x33 arcmin2





Number density
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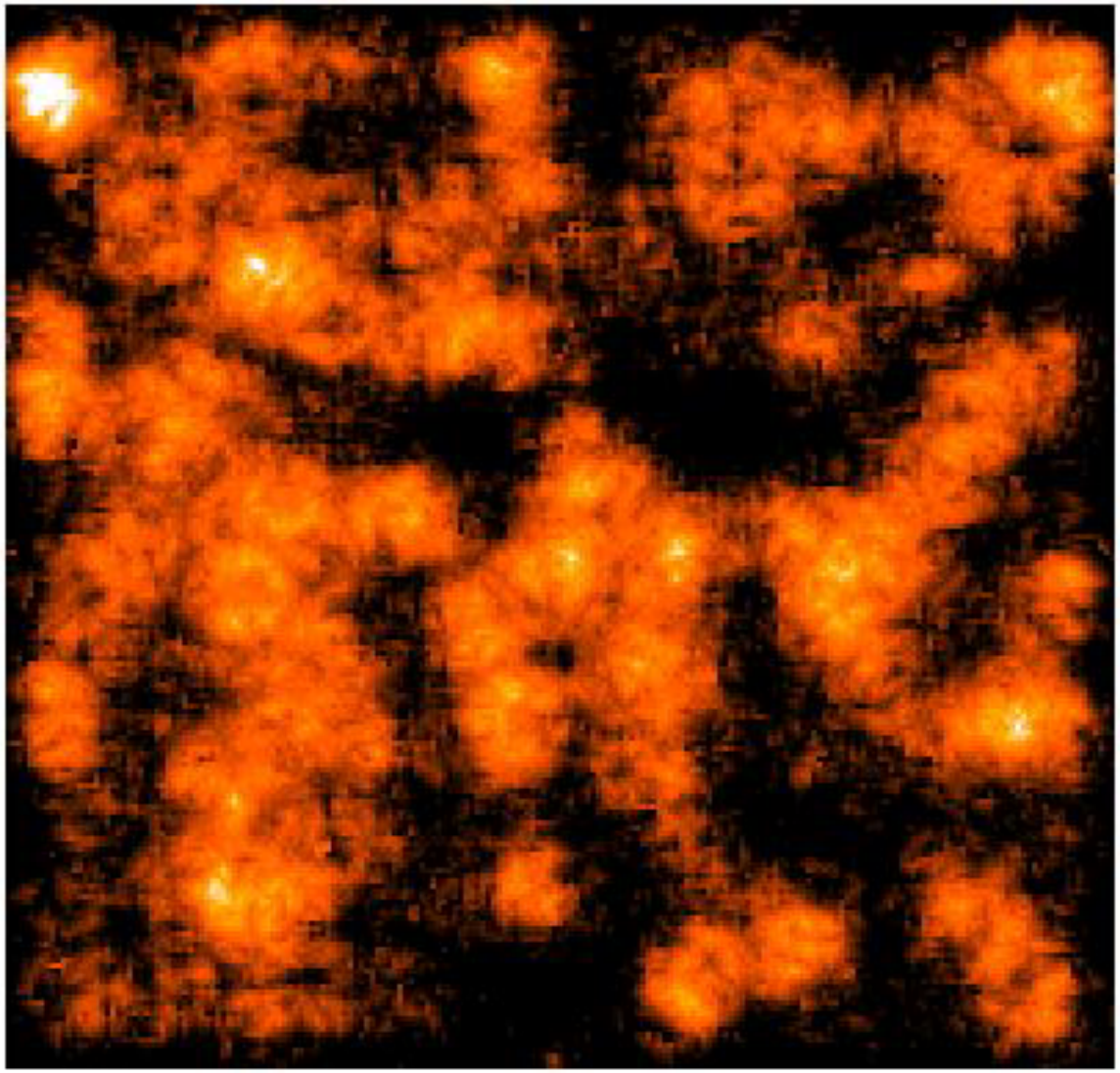
33x33 arcmin2



Some preliminary remarks....

- ***Preliminary results on z_phot accuracy within expectations.***
- ***Photoz results (Deep+Wide?) available (soon) on:***

http://webast.ast.obs-mip.fr/fienna/CFHTLS_zphot

  - See also Hyperz code update (coming soon):

http://webast.ast.obs-mip.fr/hyperz