The nature and evolution of distant SC4K Lyman-alpha emitters from z~6 to z~2

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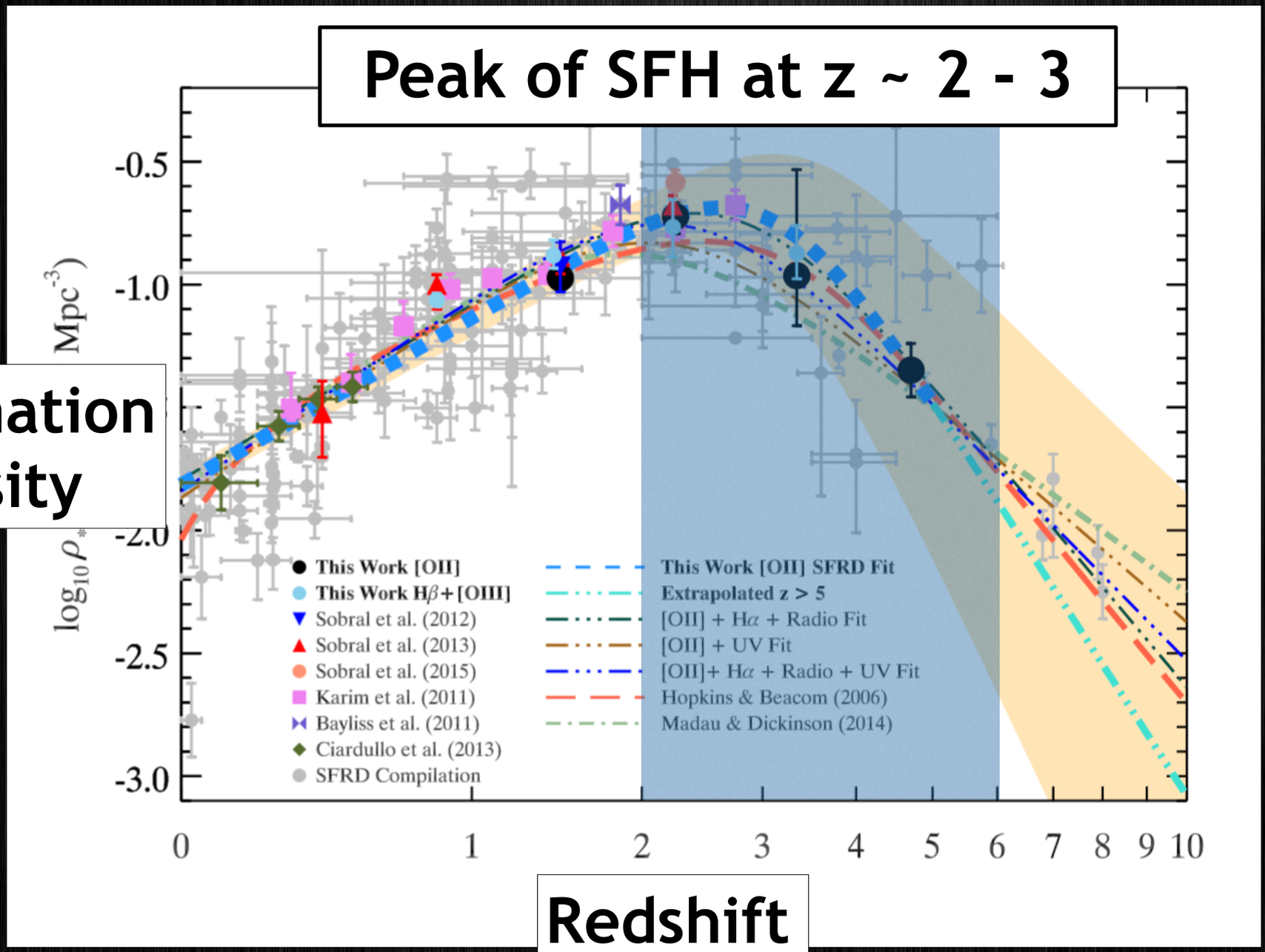
SFH of the Universe



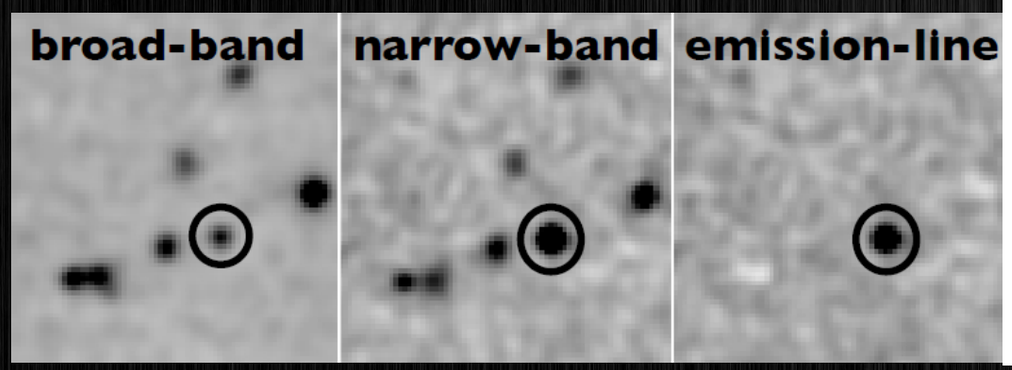
Star formation rate density

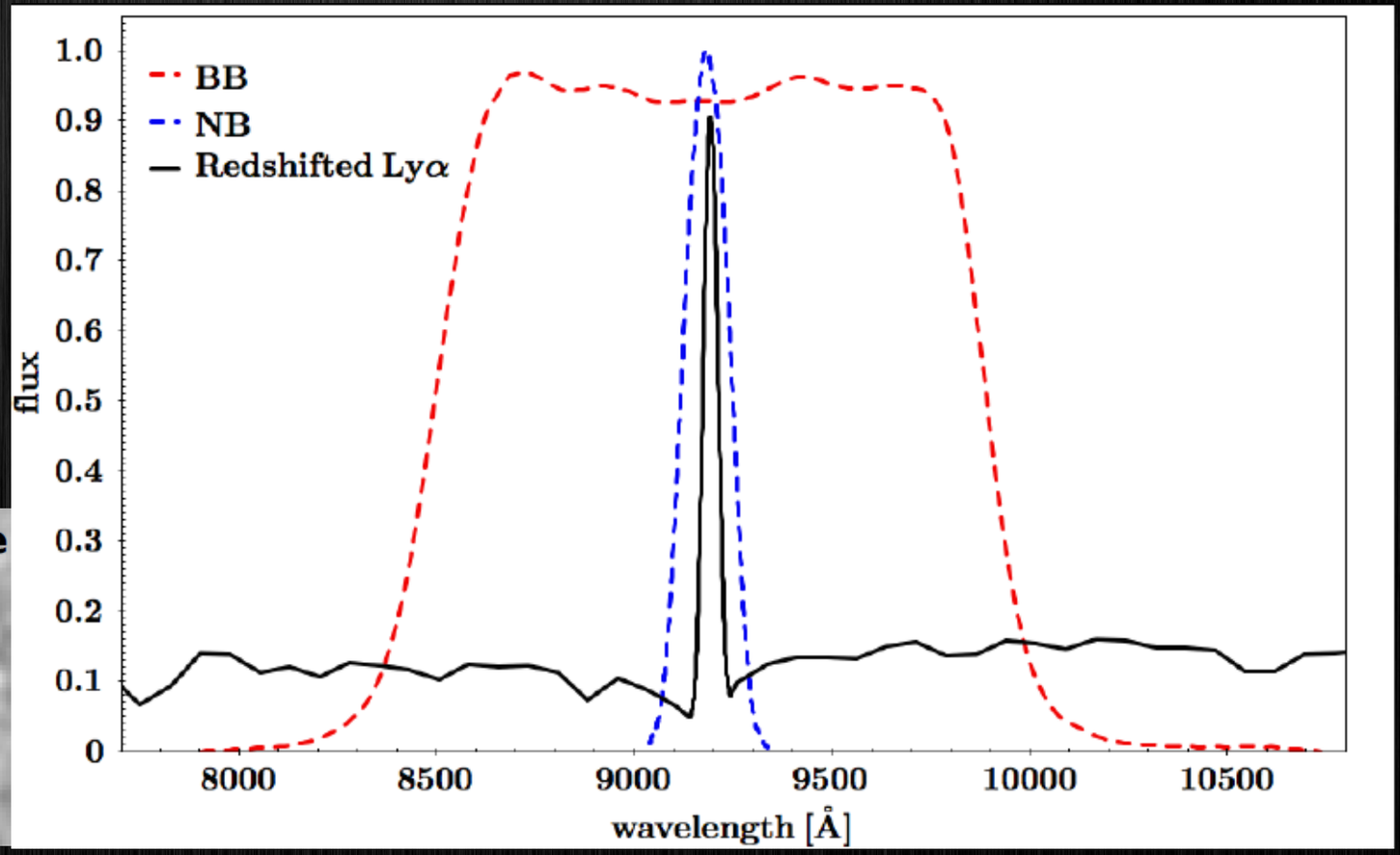
Khostovan et al. 2015

Lyα as a probe of high-z Universe

Lyα (1216 Å) emitted by star-forming galaxies (+ AGN)
Intrinsically the brightest line
Observable from ground-based telescopes at z > 2

Narrow band technique

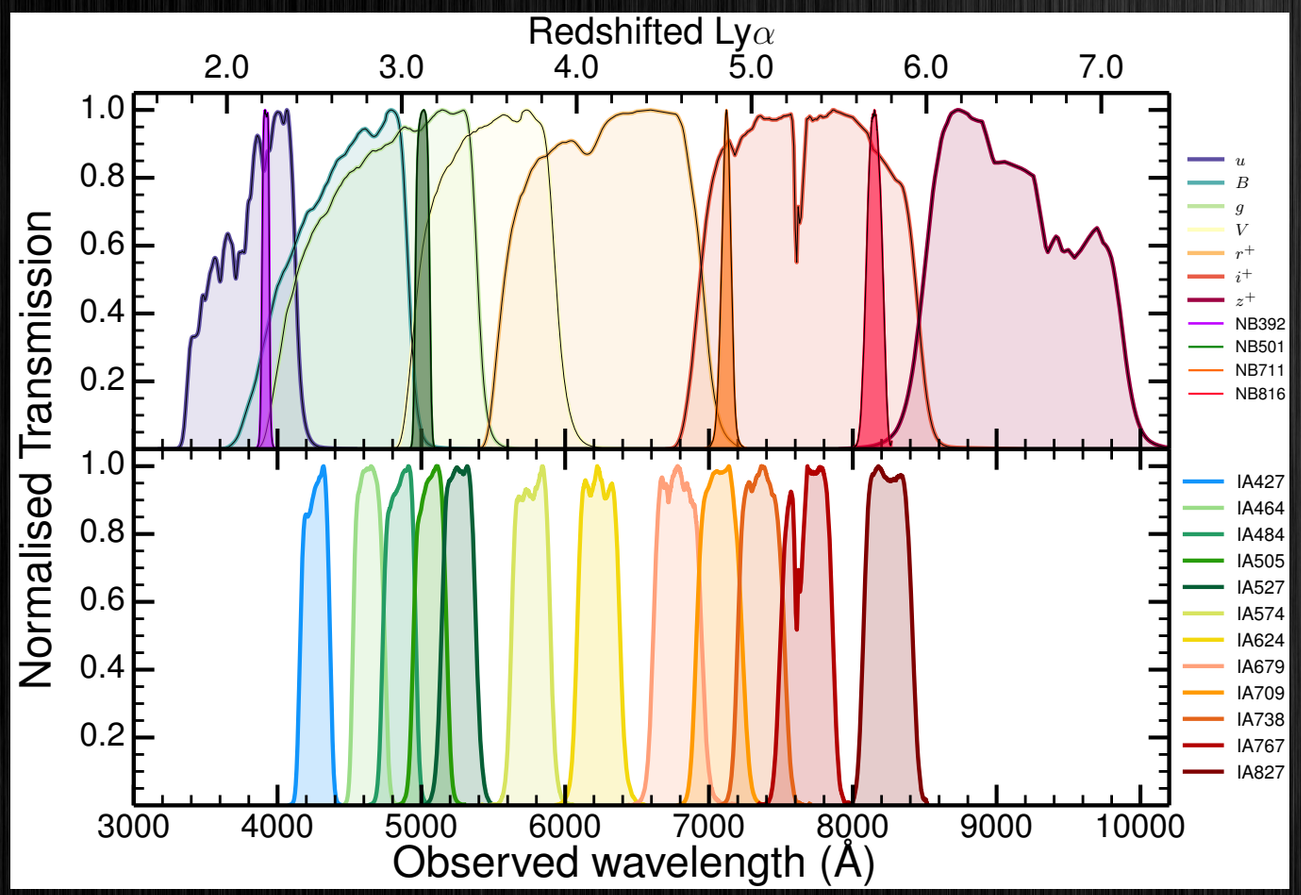


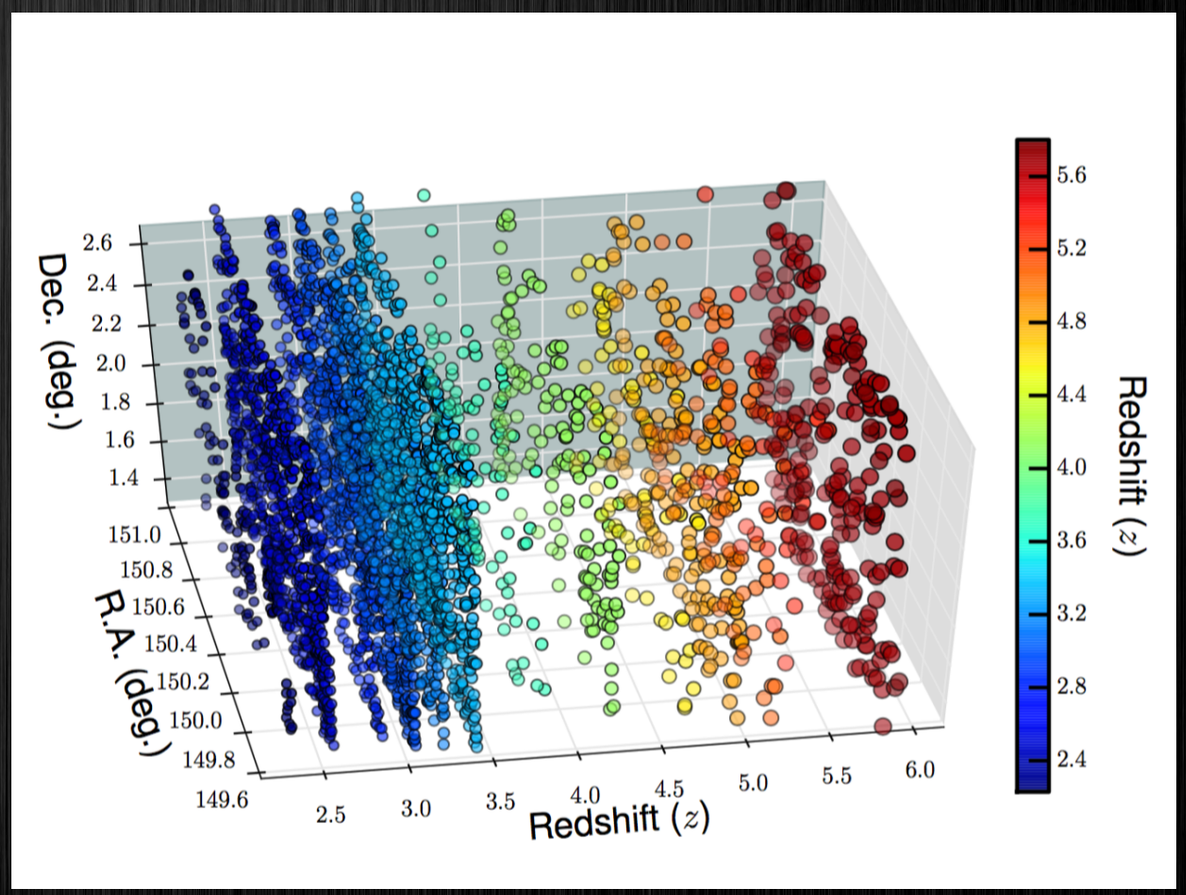


Slicing the COSMOS field (~2 deg^2)

16 redshift slices (12+4 MB/NBs)
Subaru+INT

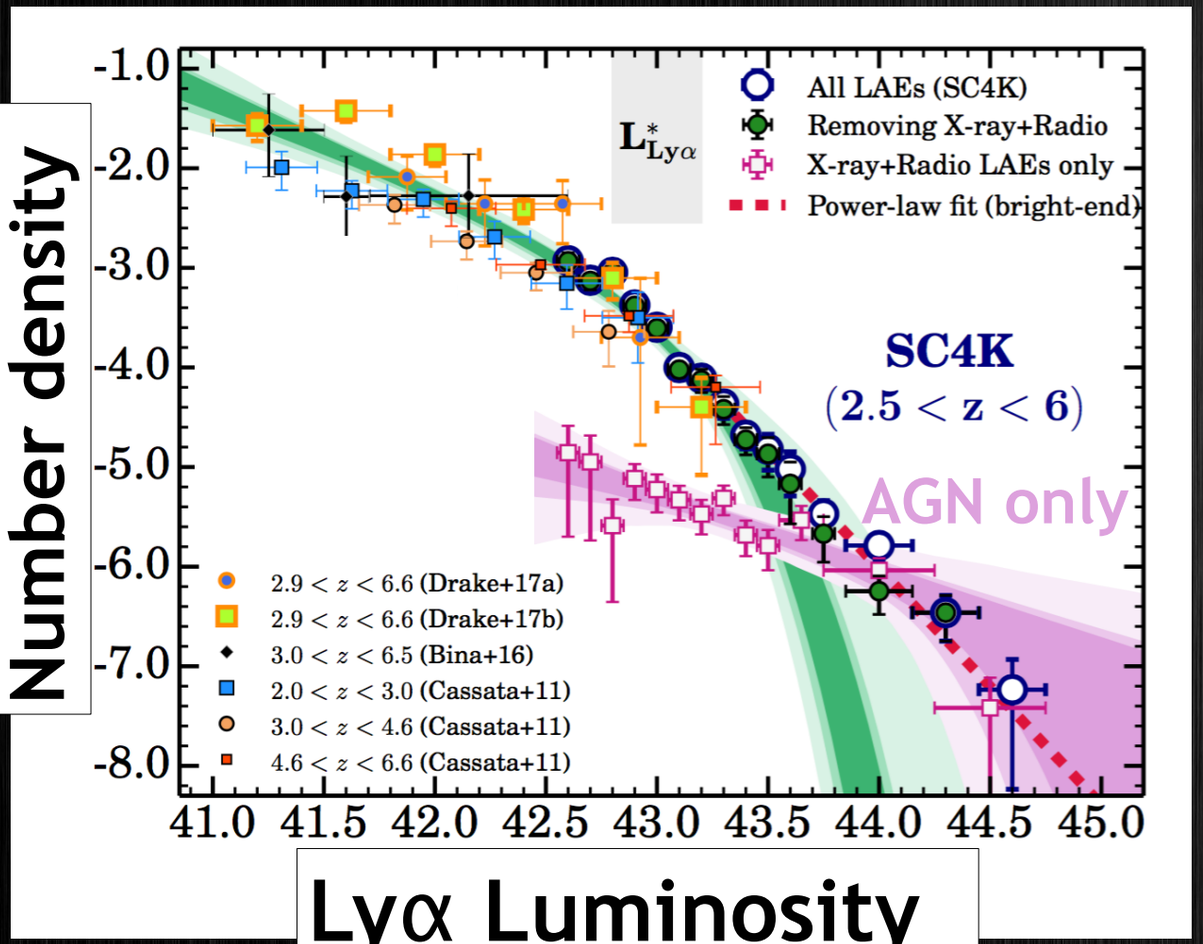
4000 Lyα emitters at z ~ 2 - 6

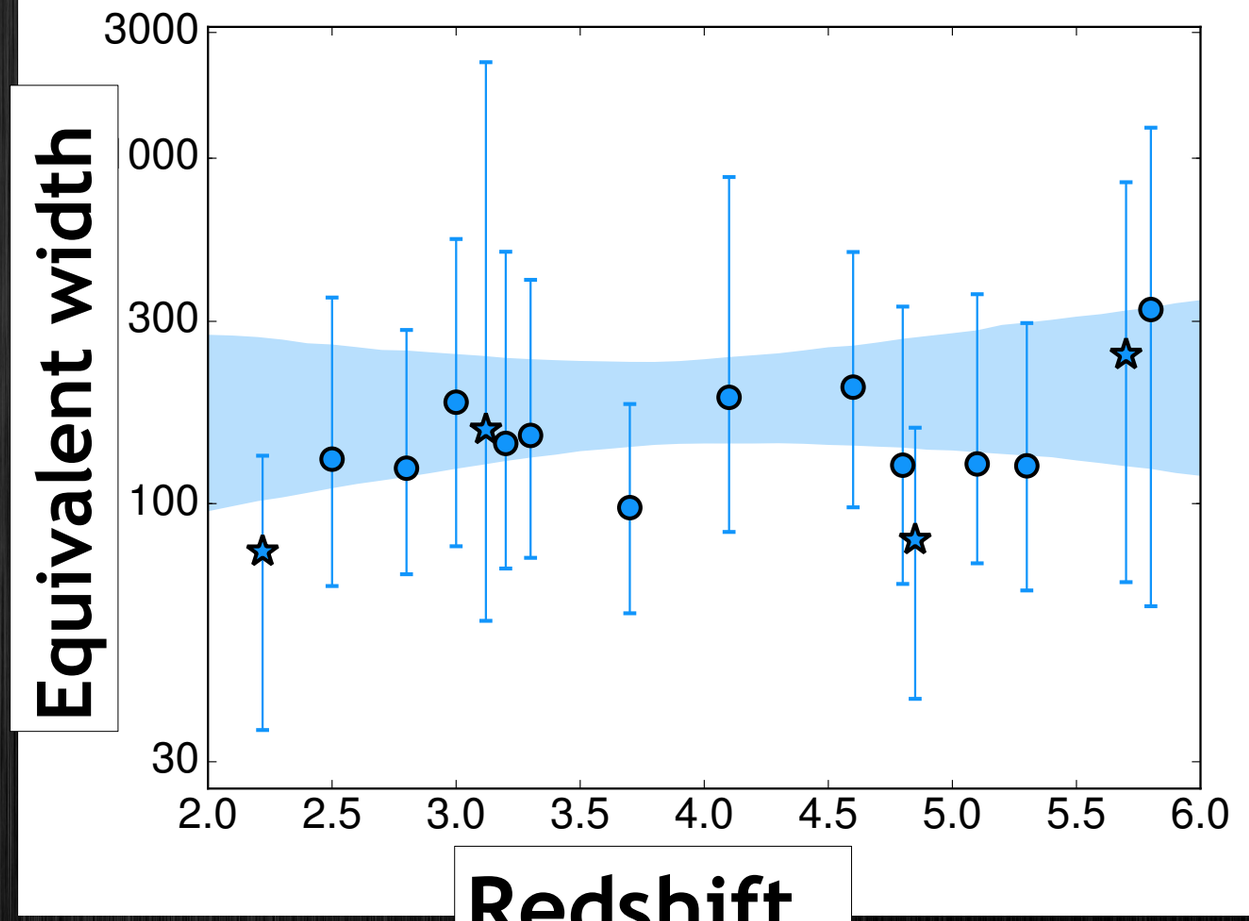




Sobral, Santos et al. 2018

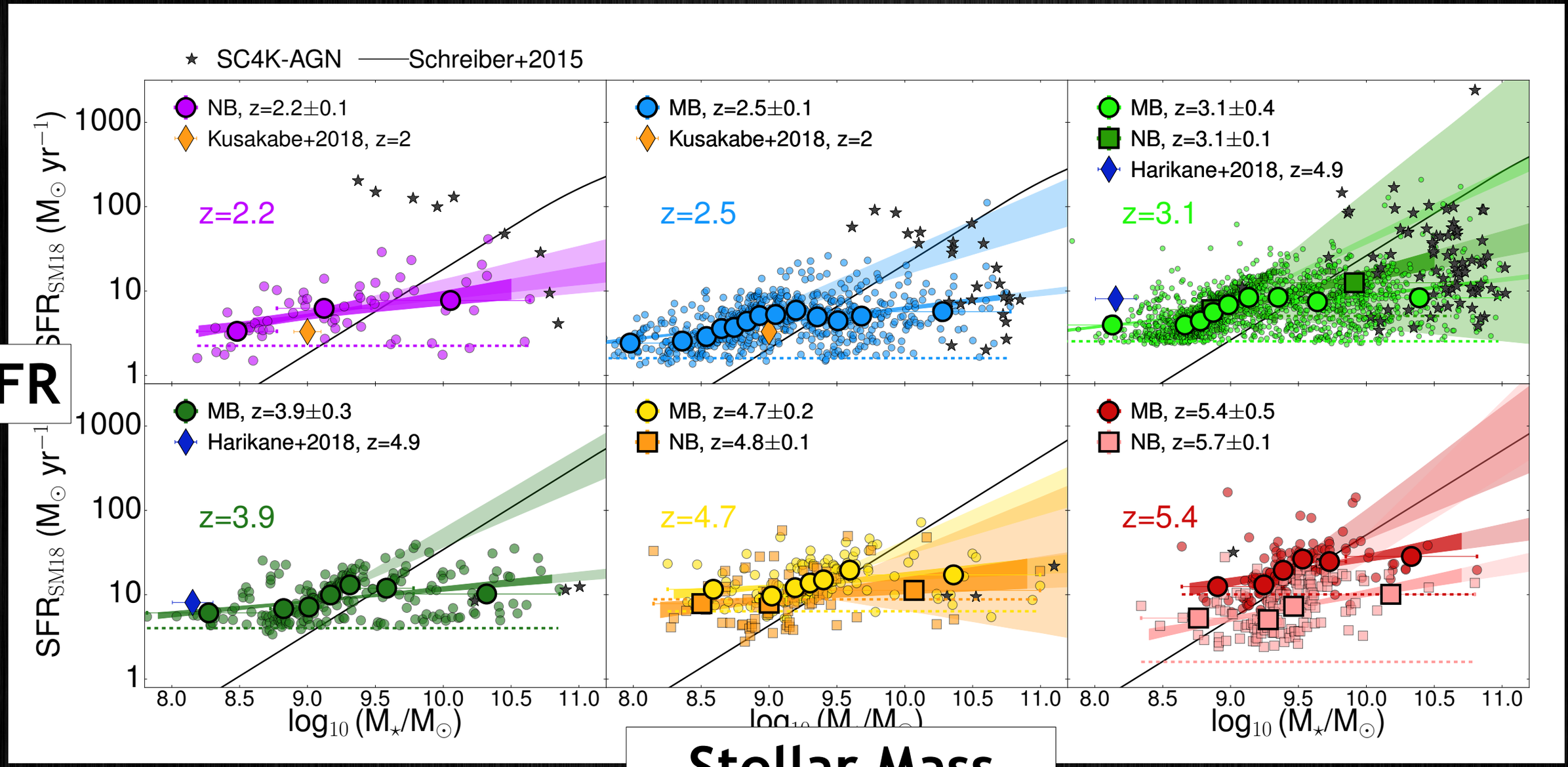
Evolution of LAE properties





[(see Calhau's talk tomorrow)]

Stellar Mass - SFR relation

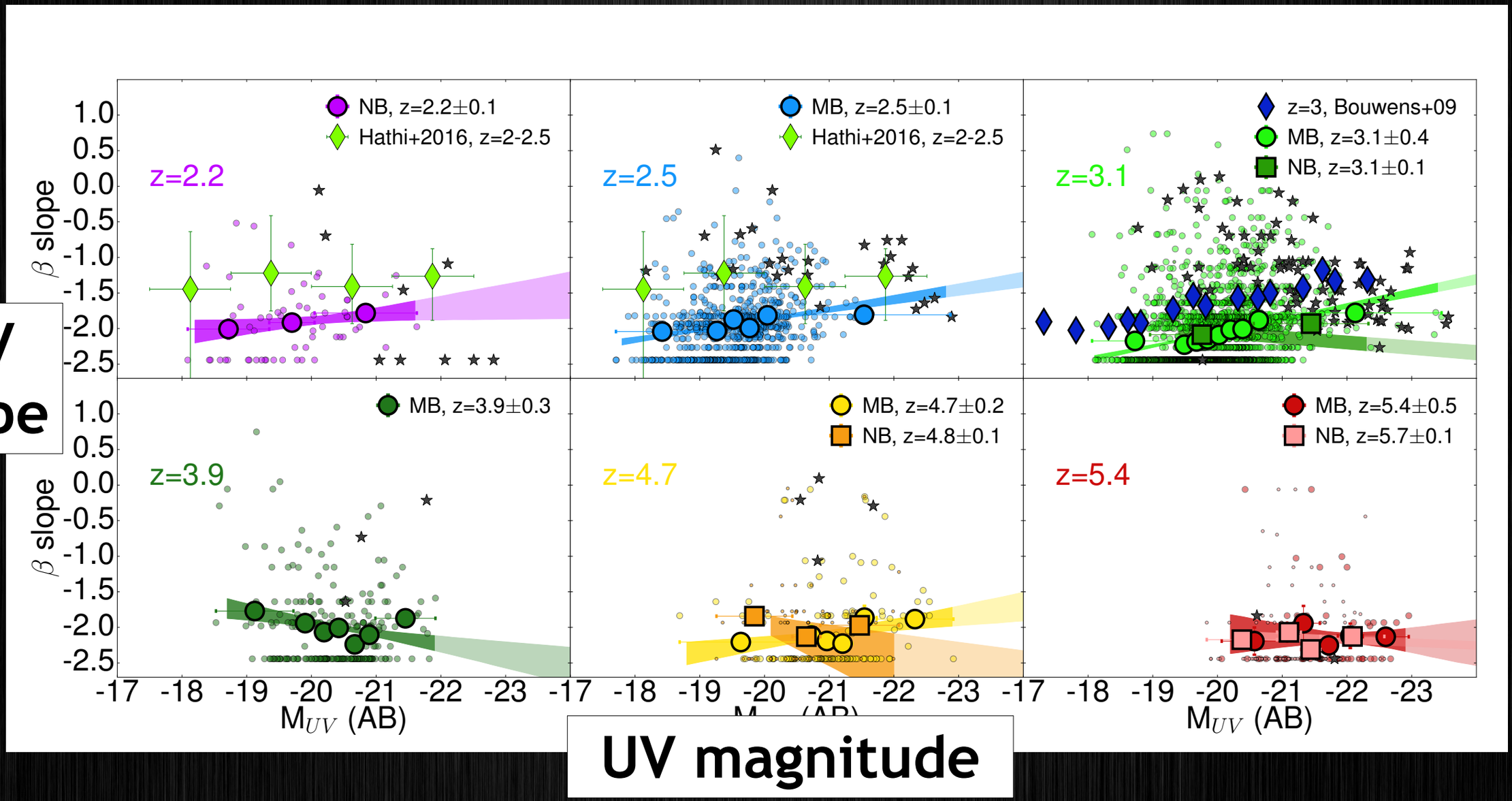


LAEs fill the low mass, low SFR range. Typically above the MS.
LAEs follow the MS slope at certain mass ranges

Muv - UV β slope

Bluer

UV slope



UV magnitude

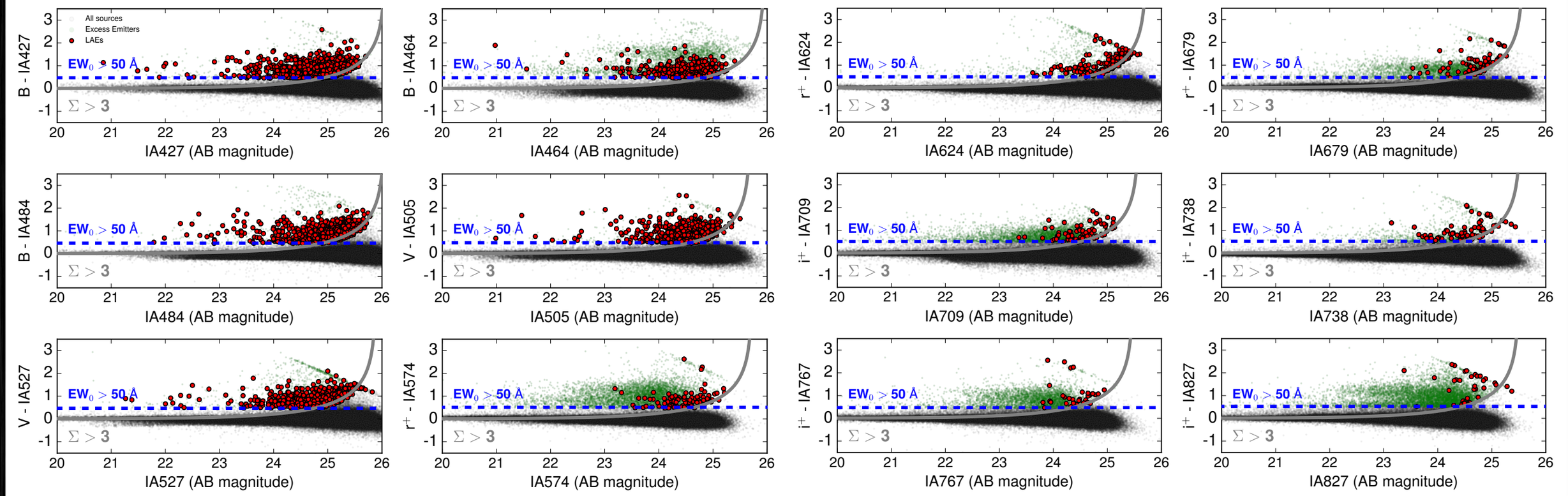
LAEs typically bluer than the LBG population

Summary

- Lyα + NB/MB to probe high redshift Universe
- SC4K: ~4000 LAEs at z~2-6 in the COSMOS field
- No evidence for EW evolution with redshift
- LAEs typically above Main Sequence but follow it for some mass ranges
- LAEs typically low stellar mass and very blue

Thank you for your attention

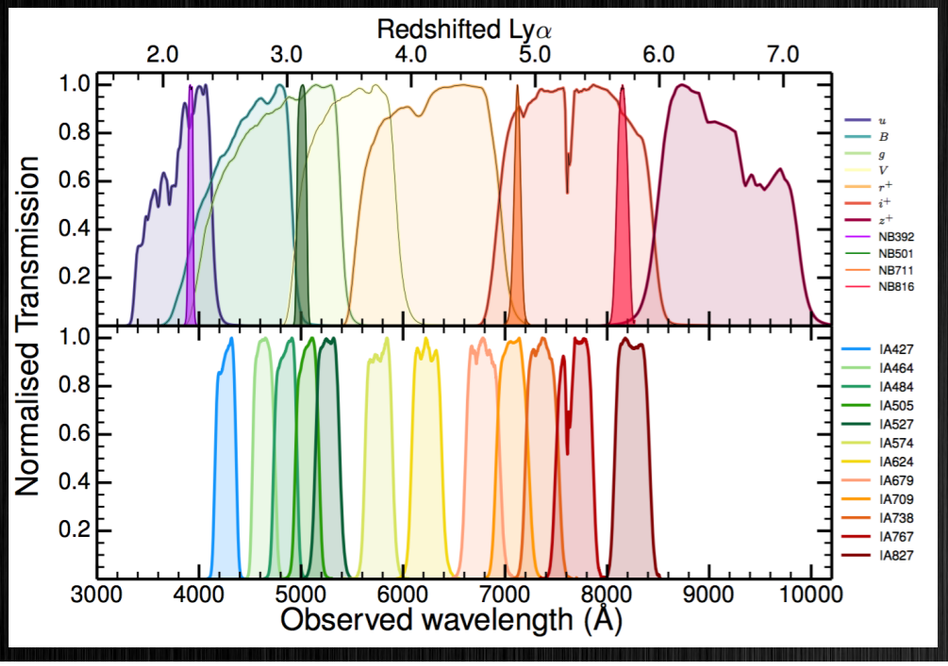
Selection of Lyman-alpha emitters

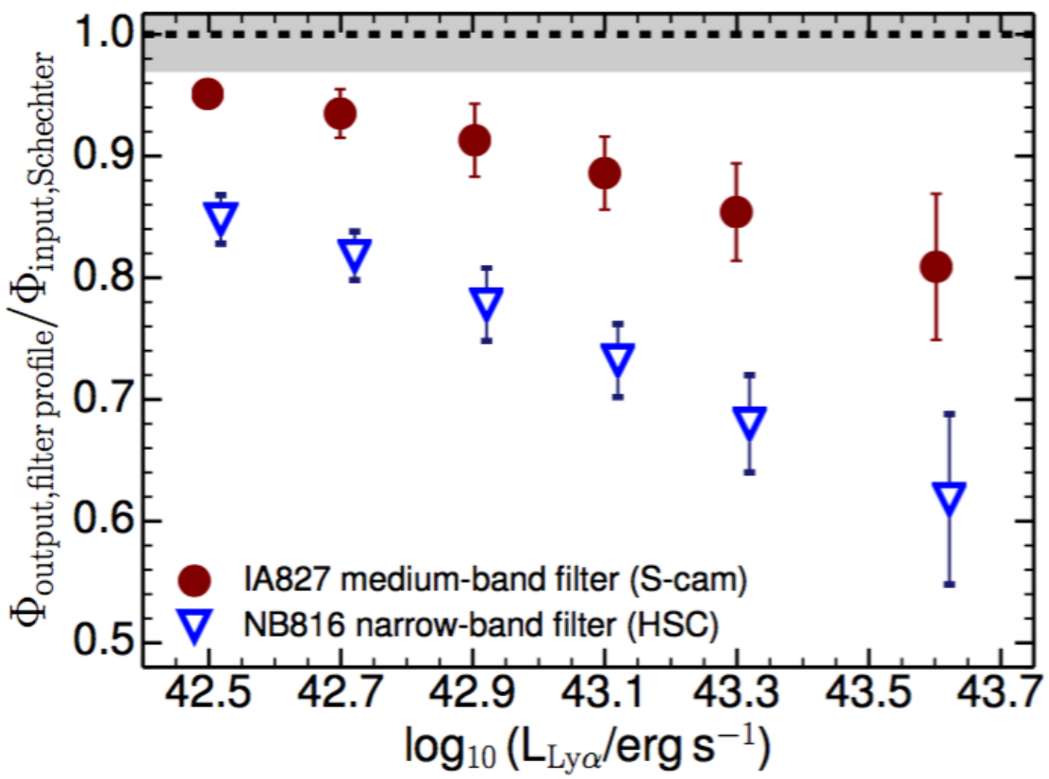


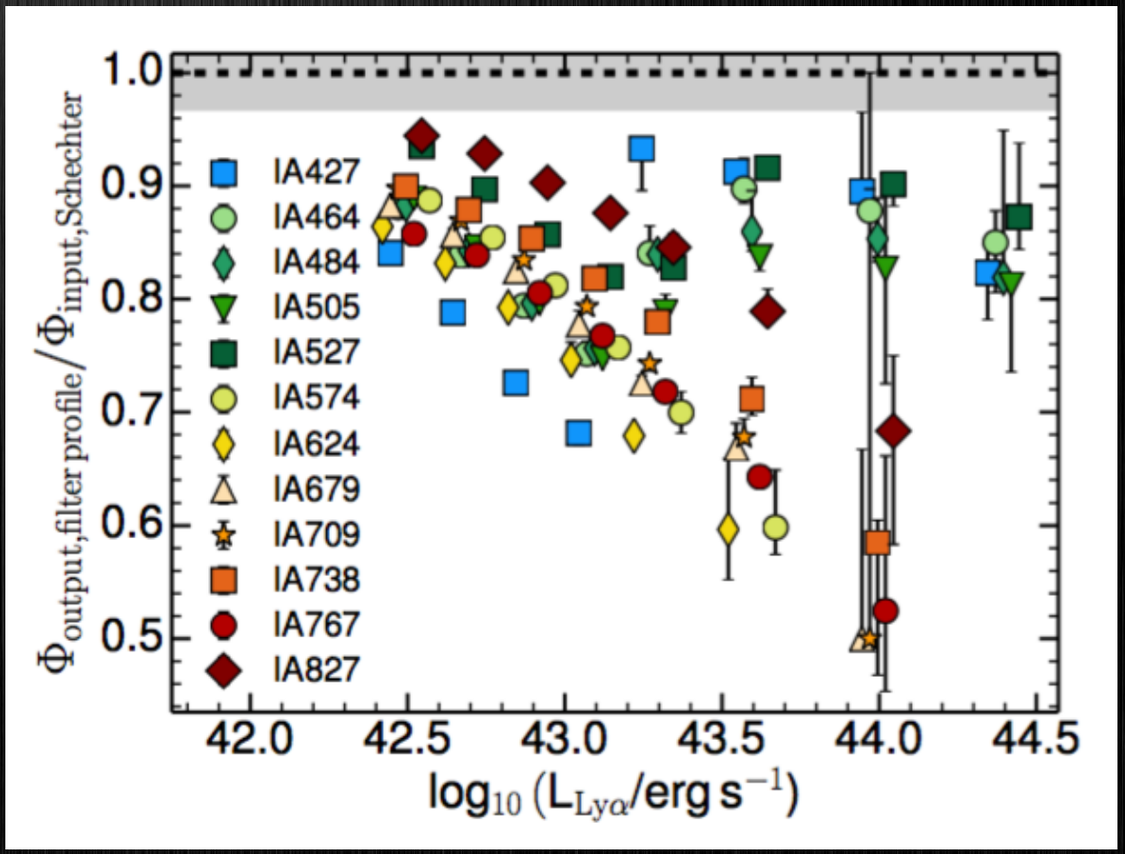
EW$_0$ > 50 Å
Σ > 3
2” apertures

Same selection
Comparable samples

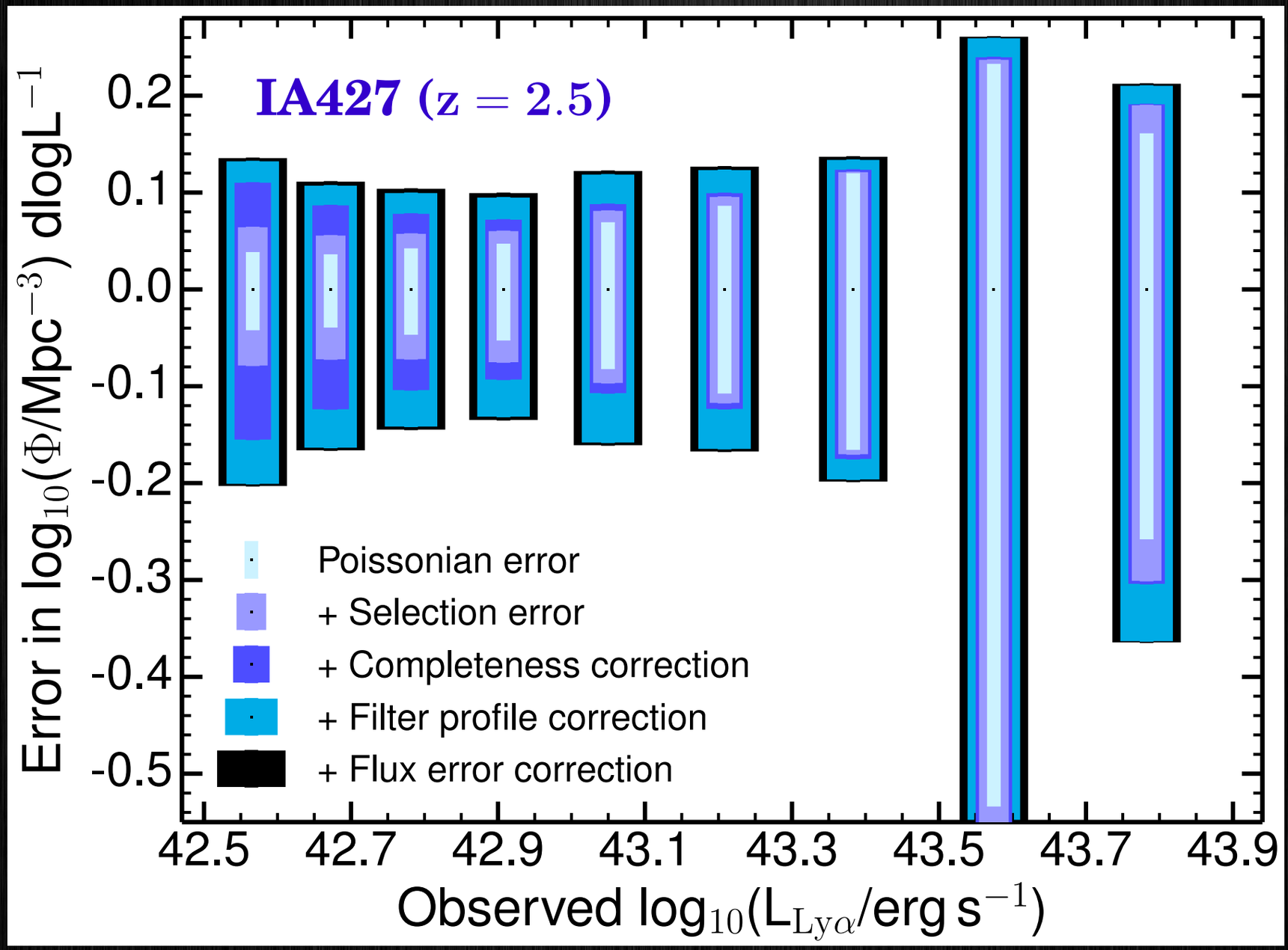
Filter profile corrections







Propagation of errors



SED fitting - MAGPHYS