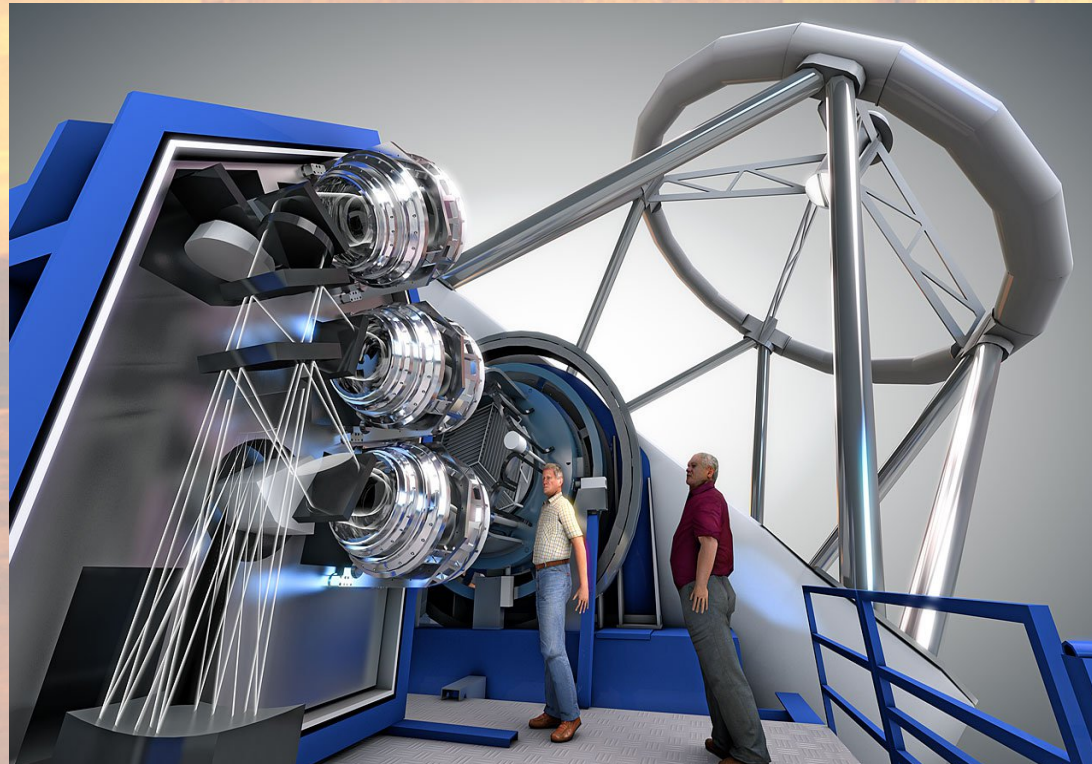


Advance sky subtraction algorithms and blind detection of Lyman Alpha Emitters in MOONS GTO data

Kevin Luke,

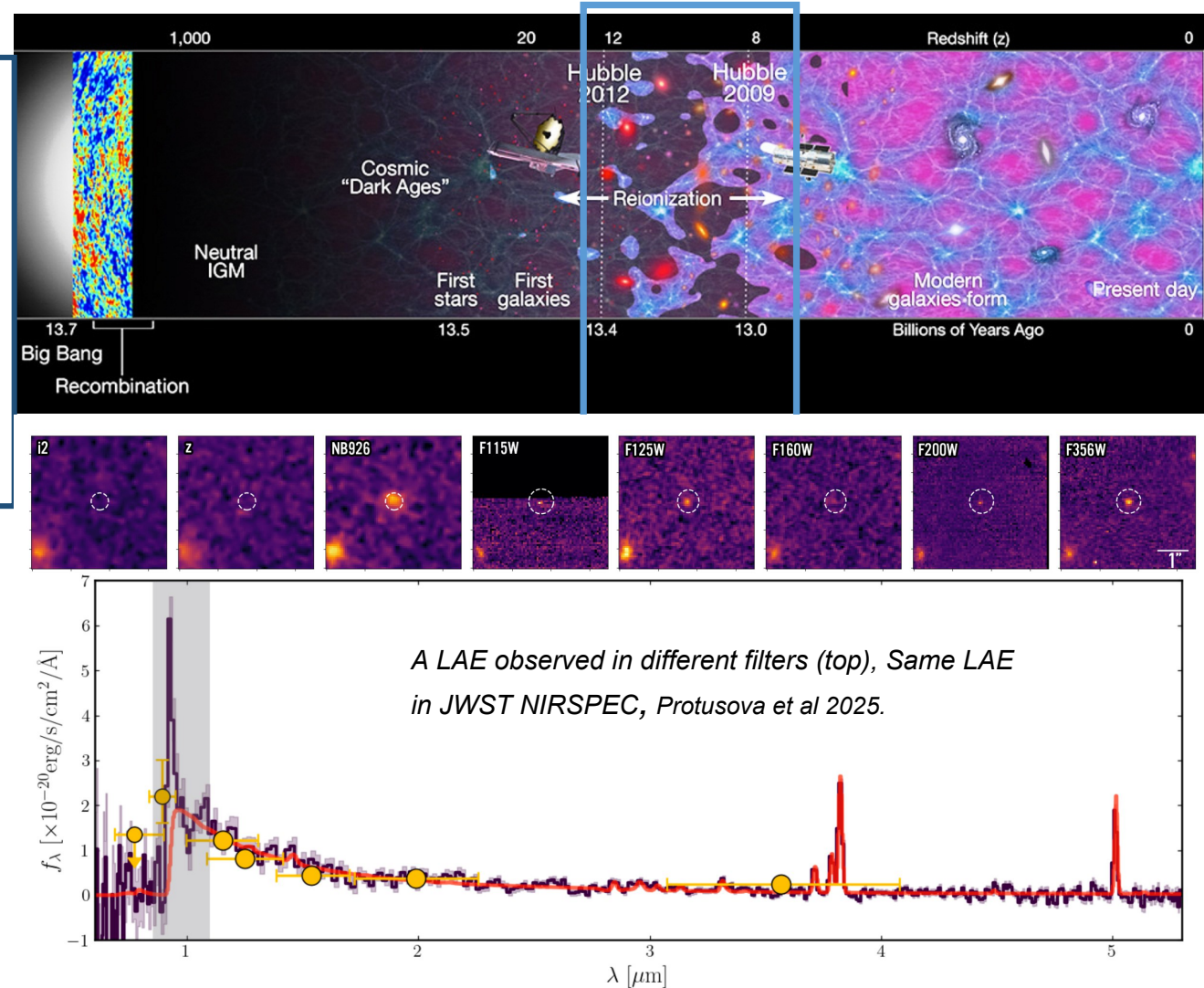
PhD student(2nd year), LUX, L'Observatoire de Paris, Meudon, PSL University

Under supervision of Dr. Mathieu Puech (LUX) and Dr. Myriam Rodrigues (UNIDIA)



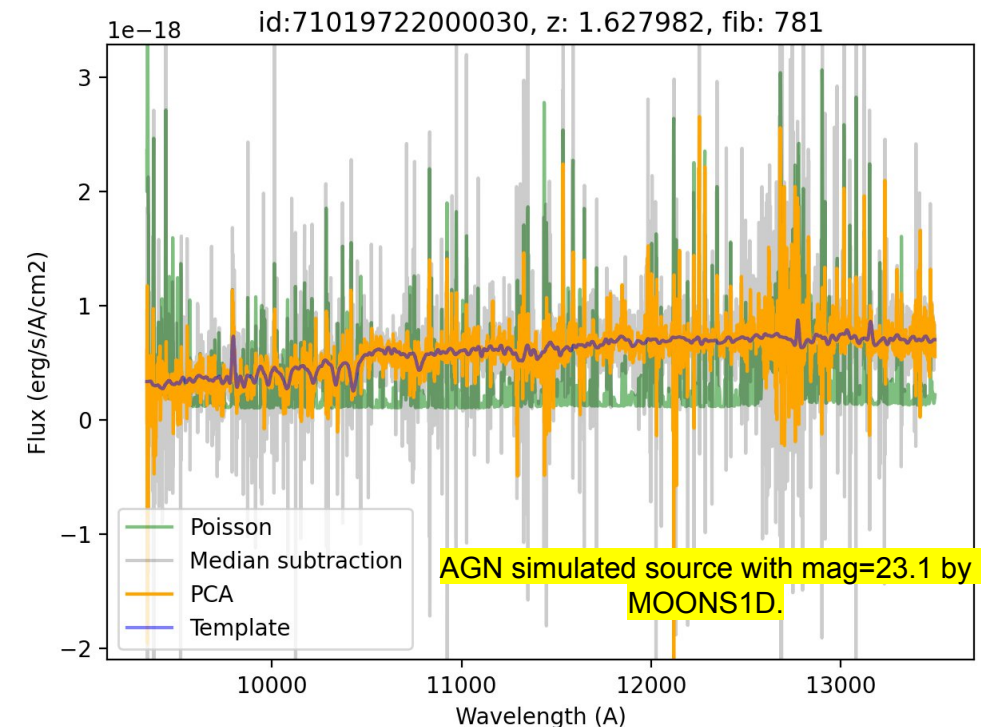
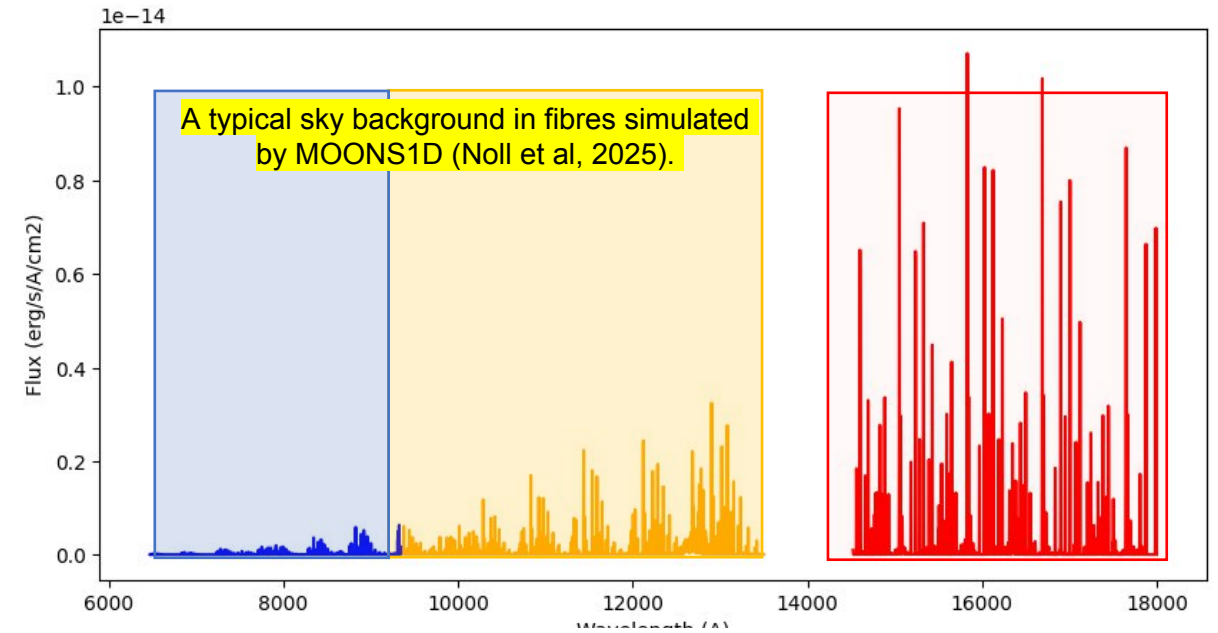
Lyman Alpha Emitters

- Starburst galaxies
- $EW \geq 20\text{\AA}$, $1216\text{\AA}$
- MOONS/GTO: $z=[5,13]$
- Mags=[22,25], blind detection



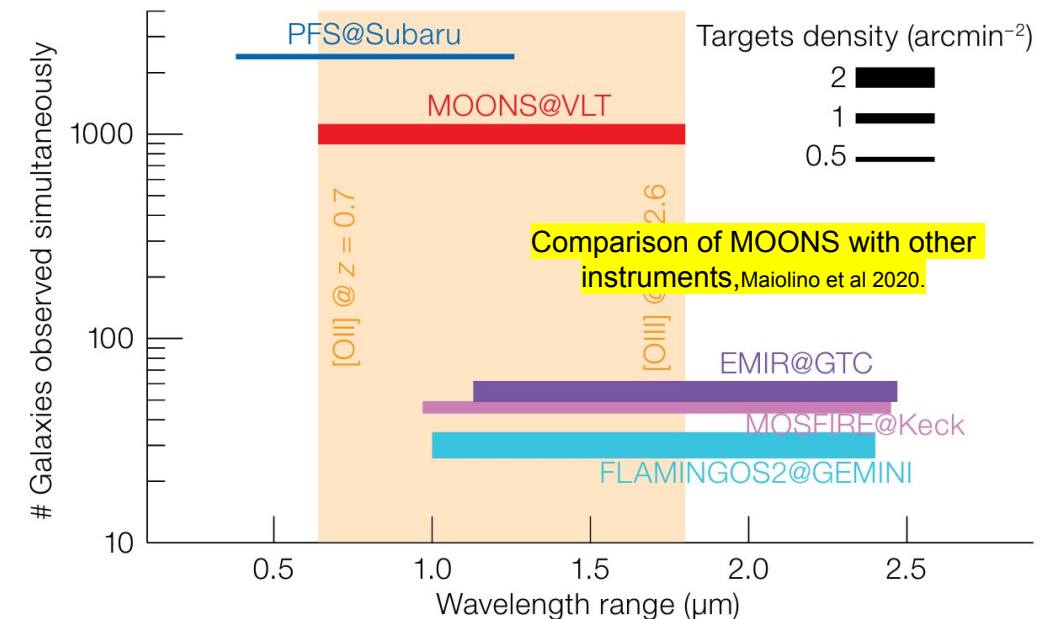
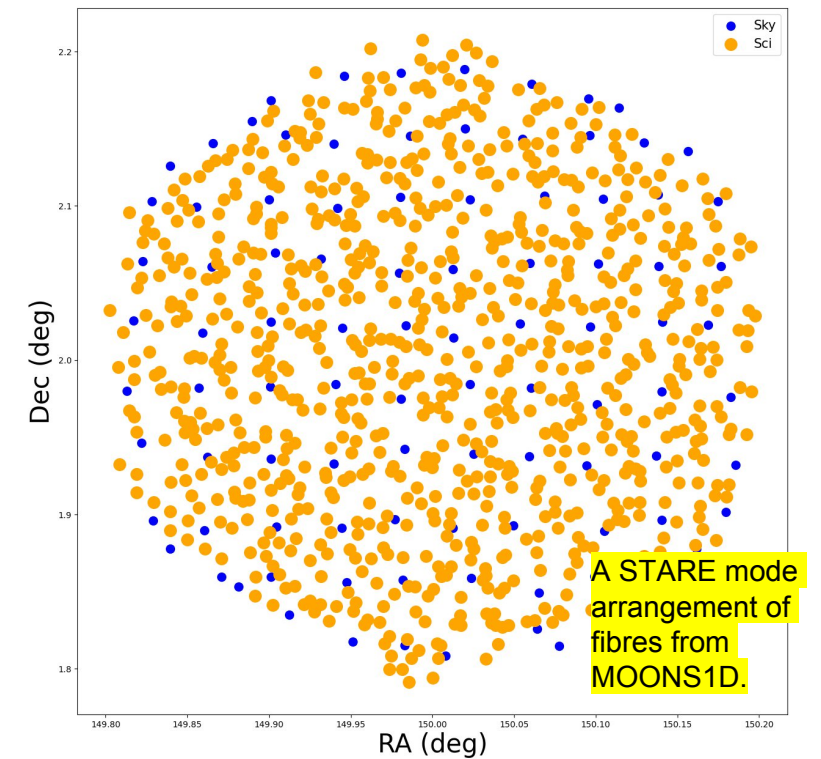
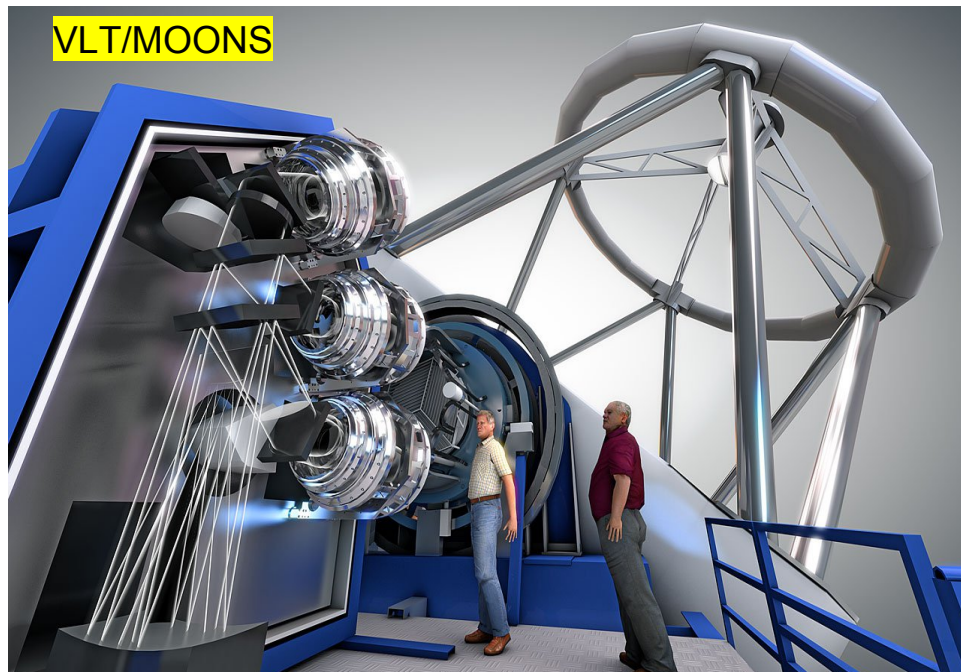
Sky background

- Airglow+zodiacal+moonlight
- ~200x stronger
- Fibre MOS=>Poor sky spatial modelling
- STARE, XSWITCH, NOD not suitable
- Explore PCA, Autoencoders

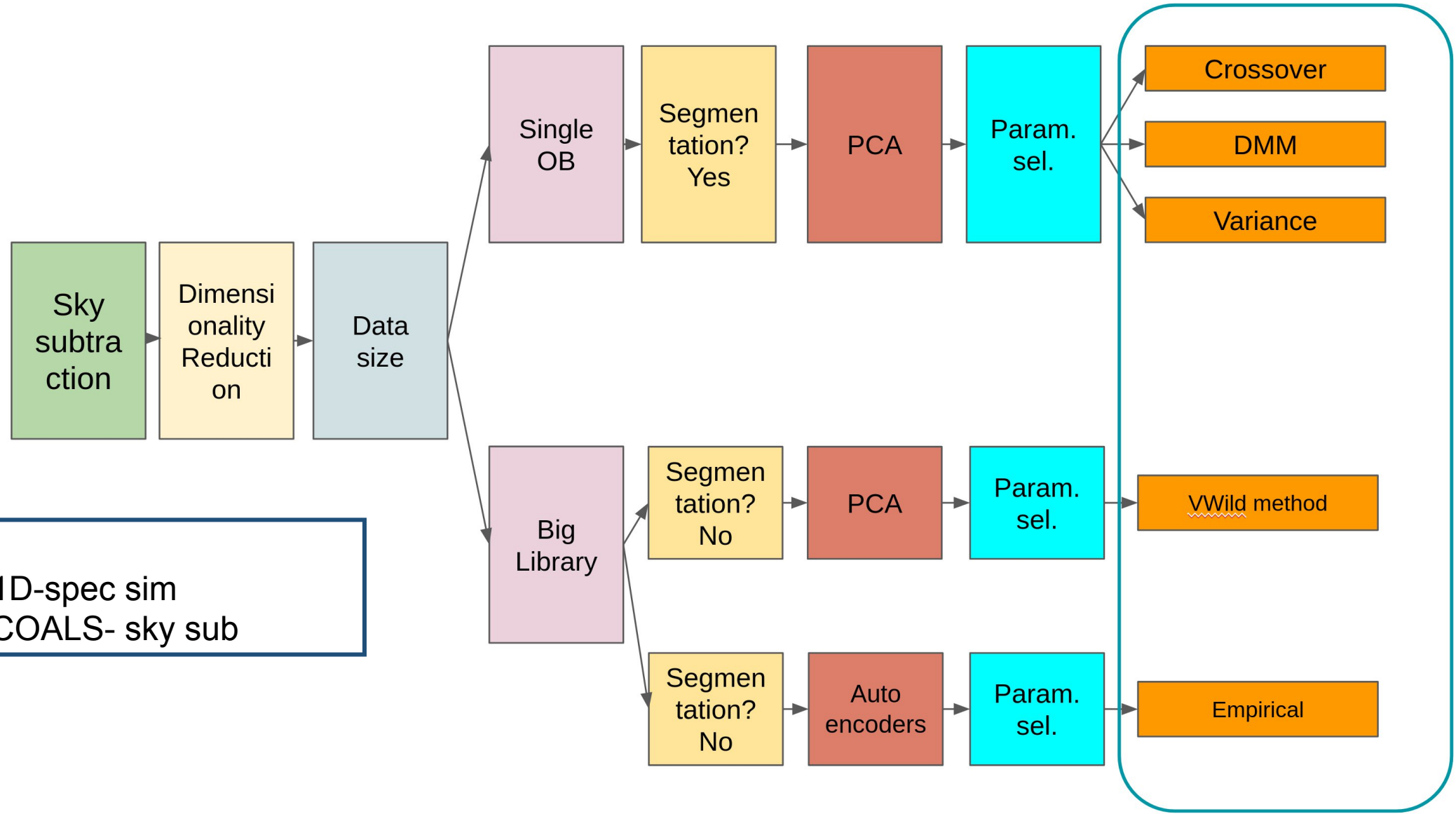


VLT/MOONS

- MOS, ~1000 fibs
- 6400-1800Å, FOV: 500 arcmin^2
- Resolution: 4100 to 18300

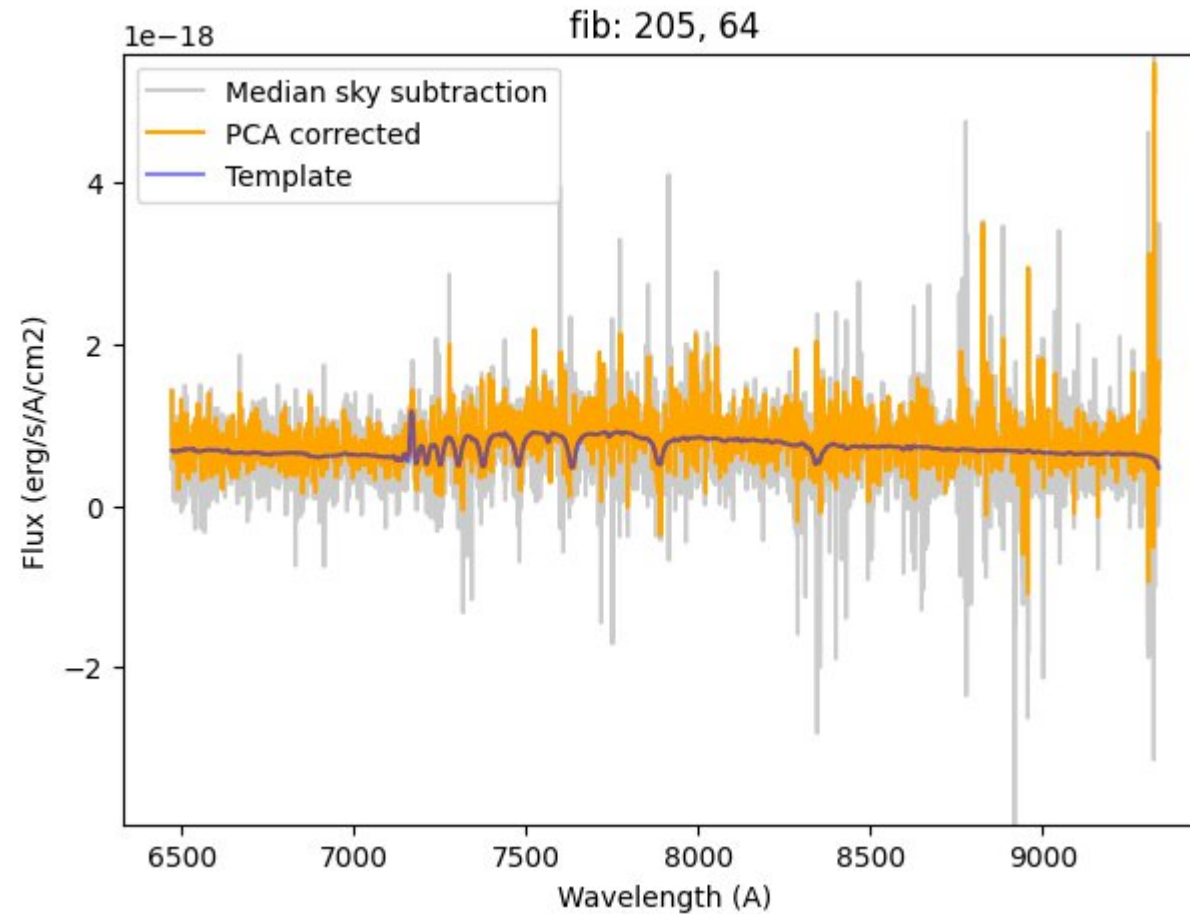


Our approach



Codes:
MOONS1D-spec sim
MOONSCOALS- sky sub

Simulated results



Sky subtraction results from one of the algorithms developed
(Damage mitigation method) of a simulated faint AGN.

Thanks!