Environment effects on galaxy evolution with WST: insight from the COSMOS Wall

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How galaxies quench?

Internal processes

External processes

Correlate with galaxy properties (e.g. stellar mass)

Correlate with the density of the environment

COSMOS Wall structure ($z \sim 0.73$)

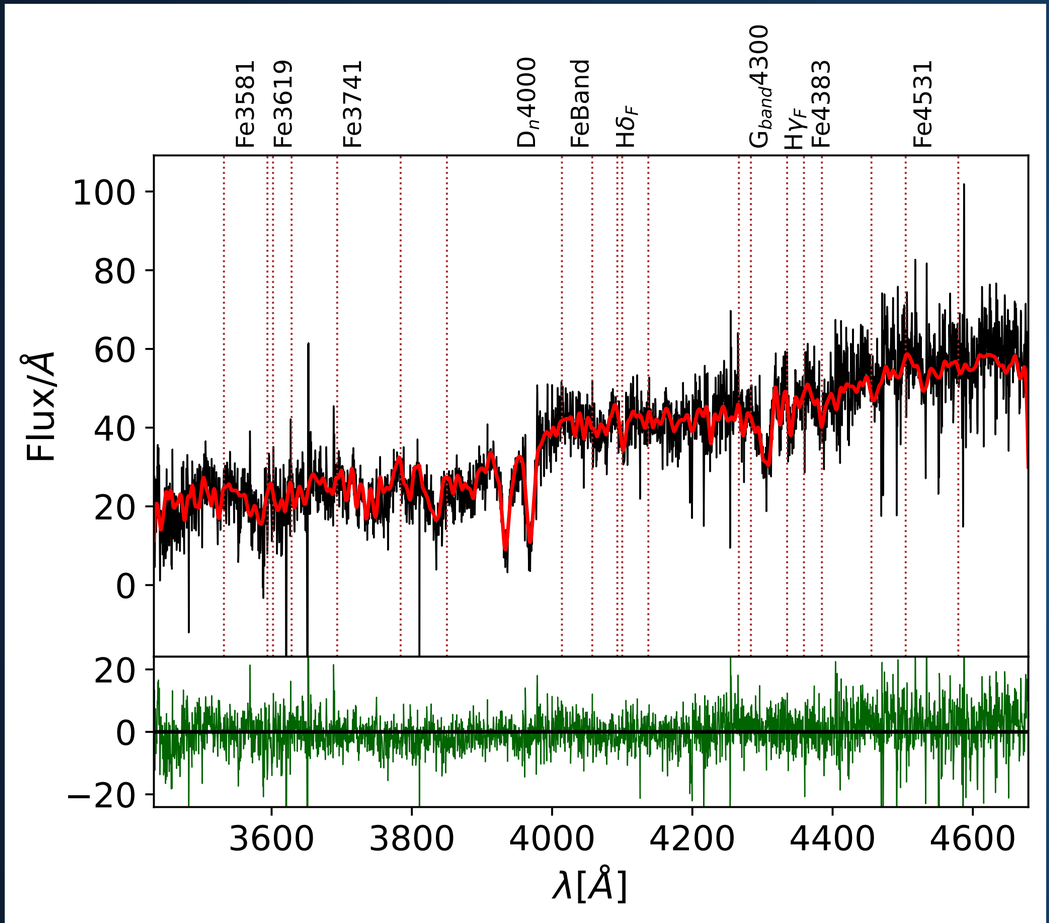
Comprehensive range of environments

High quality spectroscopic and photometric data for massive quiescent galaxies

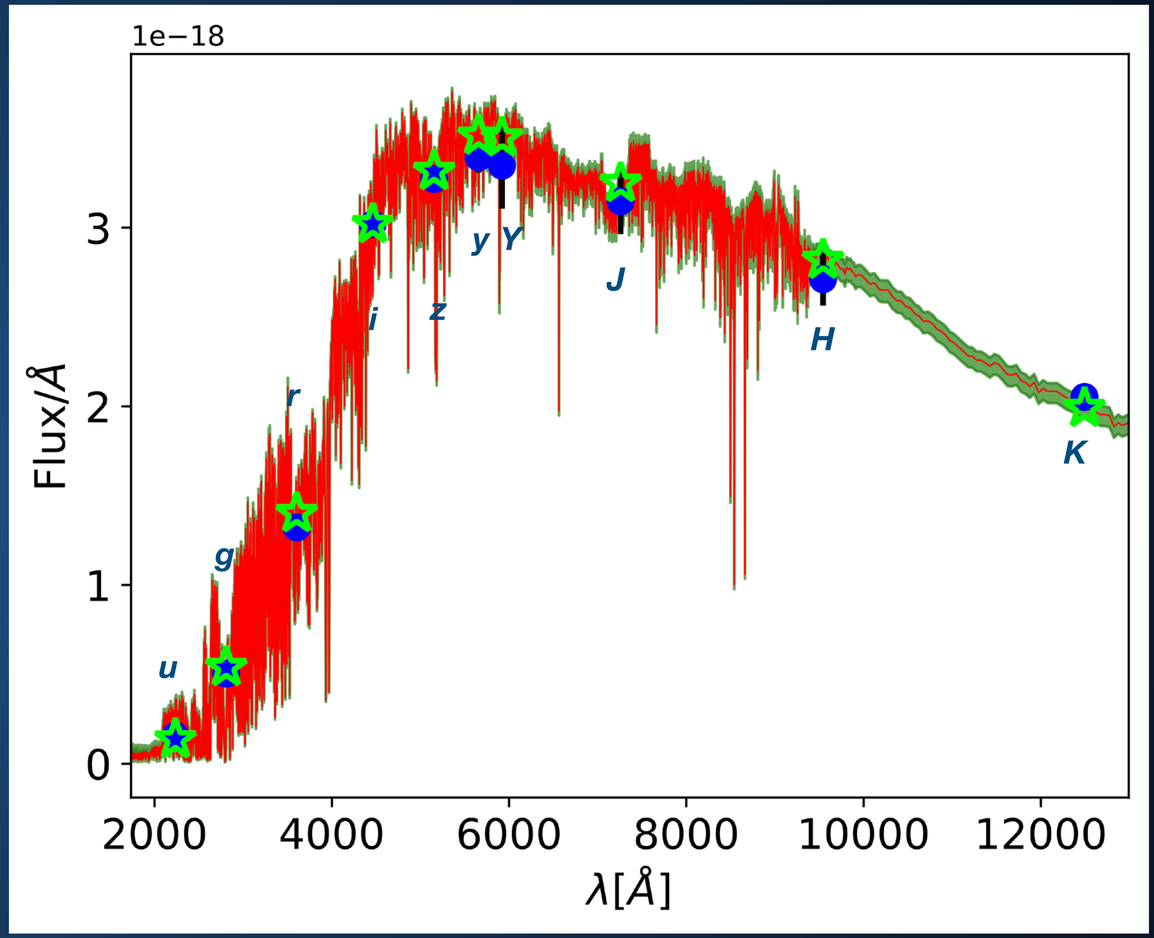
Analysis: Full-index + photometric fitting

We are able to reproduce both spectrum and photometry

Ditrani et al., submitted



Ditrani et al., submitted

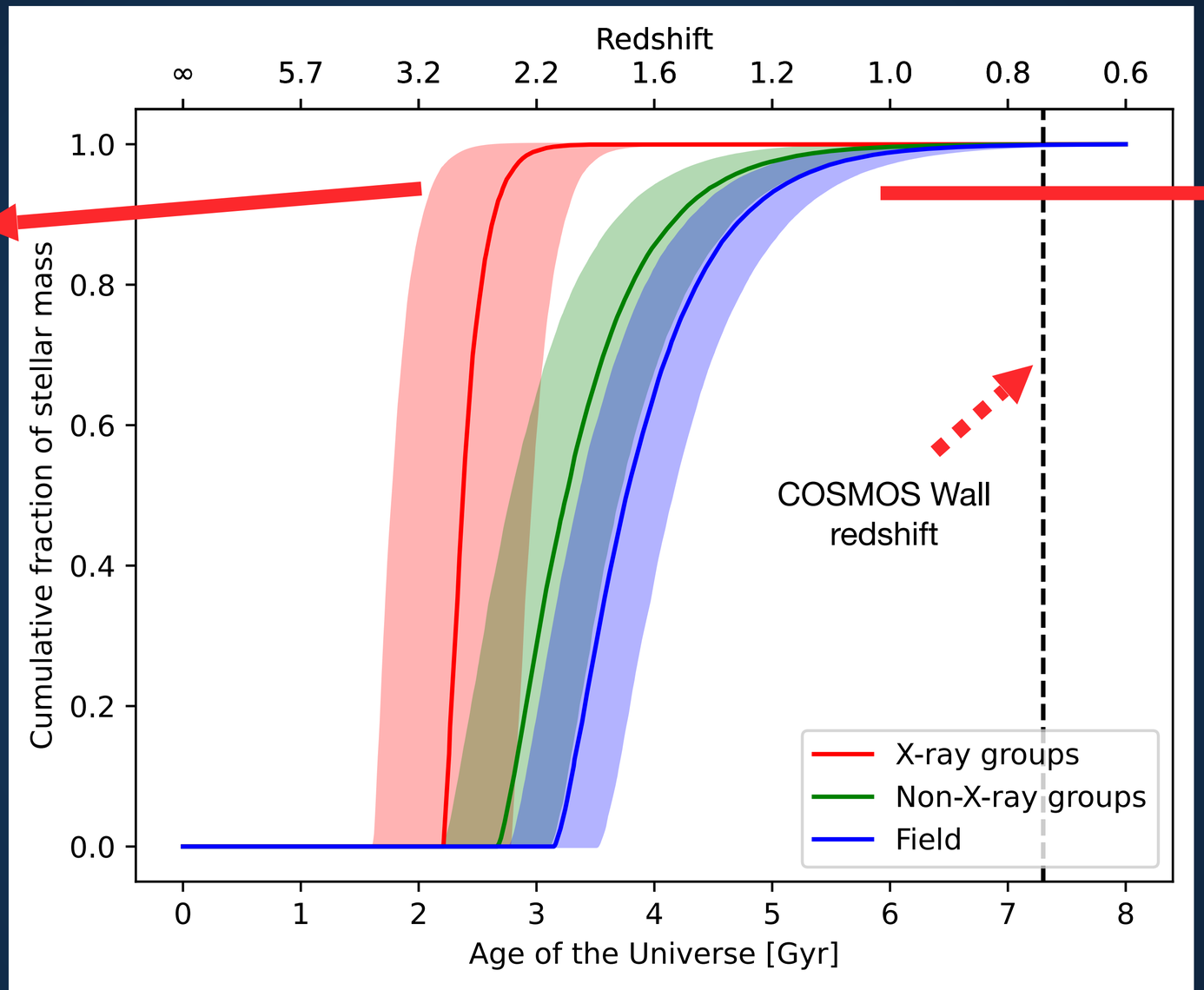


The environment effects

Different environments imply different physical quenching processes for massive quiescent galaxies

Galaxies in high density environments

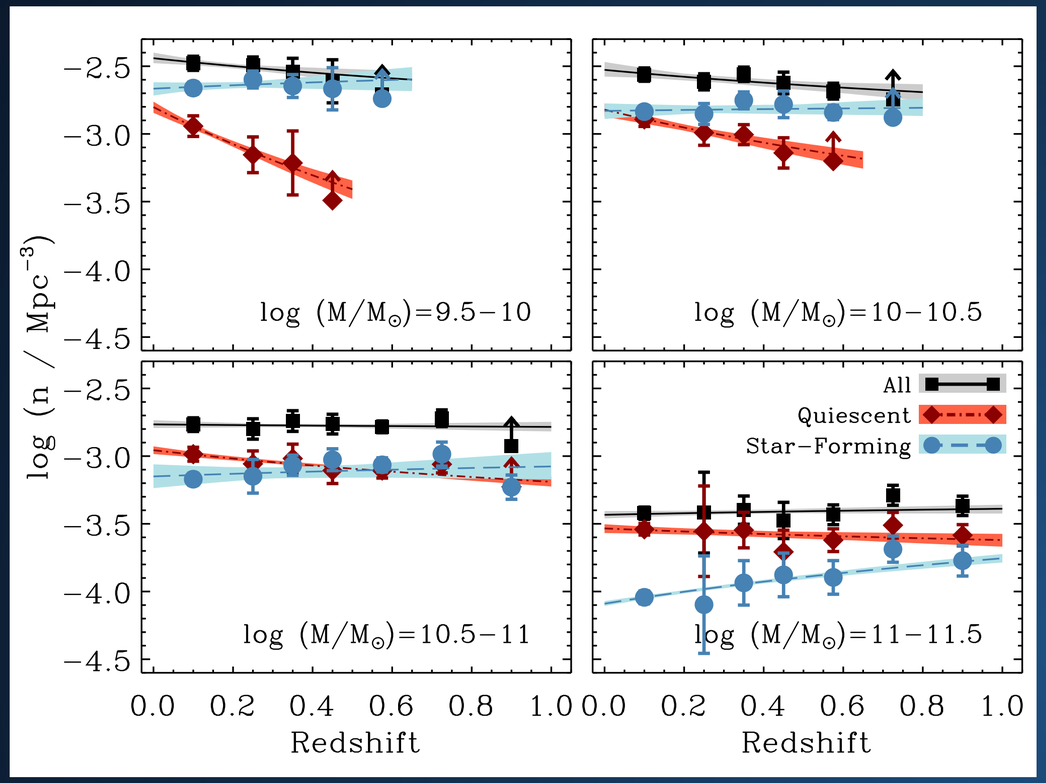
Mainly regulated by external mechanisms like ram-pressure stripping



Field galaxies

Internal processes like cosmological starvation

What can we do with WST ?



Moustakas et al., 2013

$3deg^2$ FoV

Coverage of mass distribution of quiescent galaxies at $z \leq 1$

- Observation of entire cosmic structures $z \leq 1$
- Obtain a statistical sample of quiescent galaxies in different environments