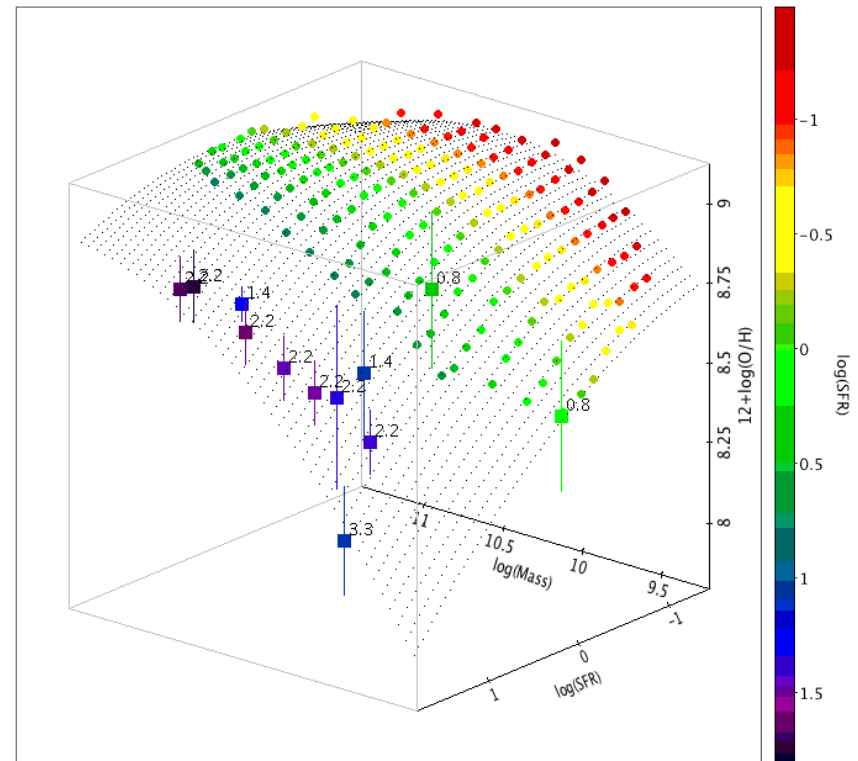
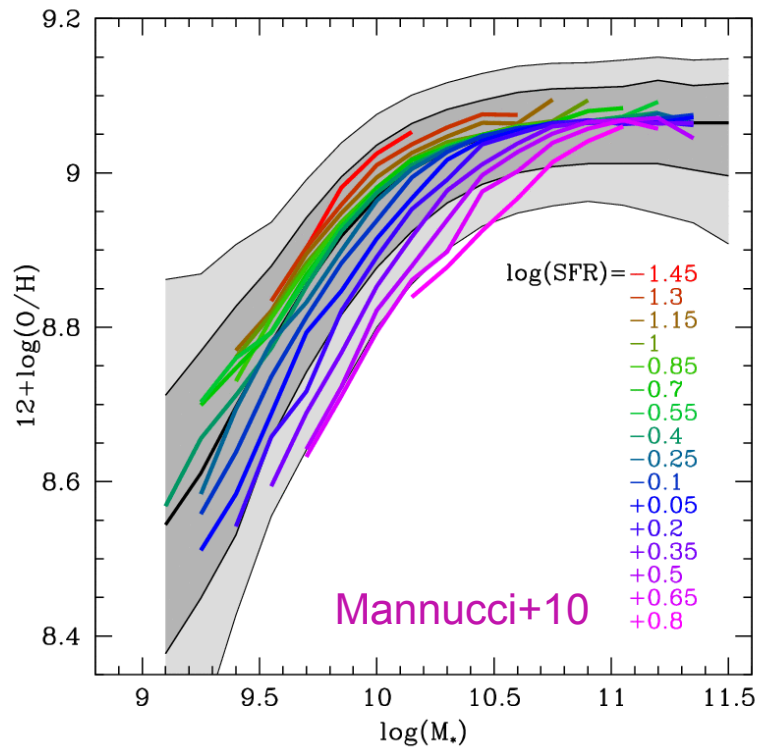


The Fundamental Metallicity Relation

Metallicity depends on mass and SFR

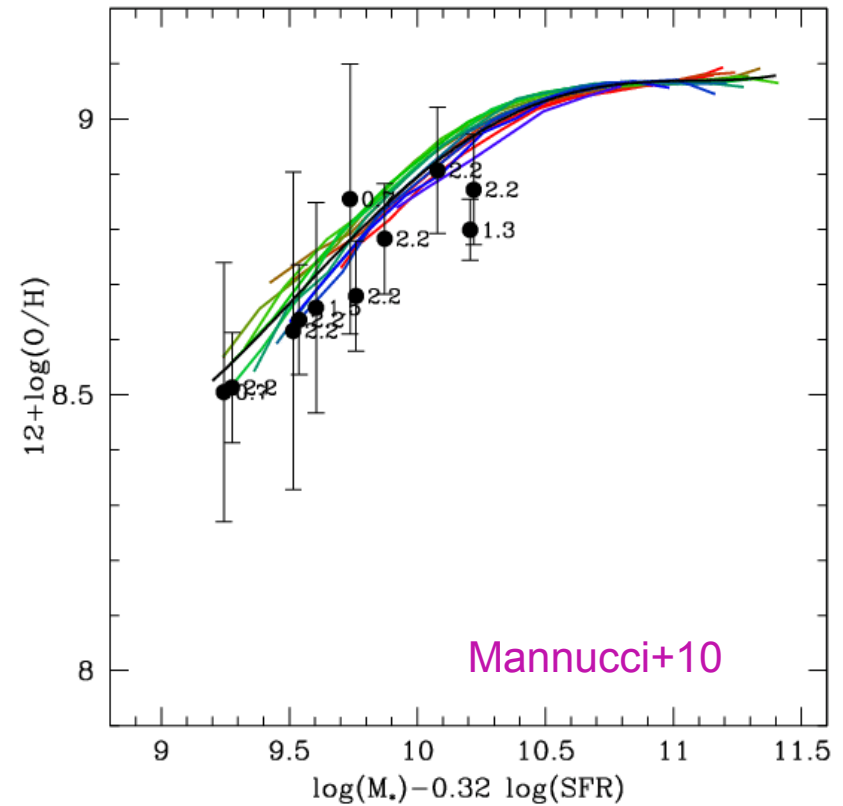
Spread ~ 0.05 dex (12%)

No evolution up to $z=2.5$: high redshift galaxies follow the local relation



The FMR edge-on

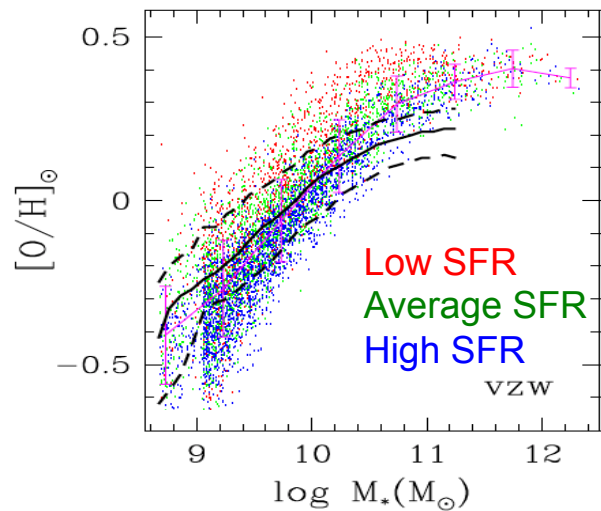
$$\mu_{\alpha} = \log(M) - \alpha \log(\text{SFR})$$



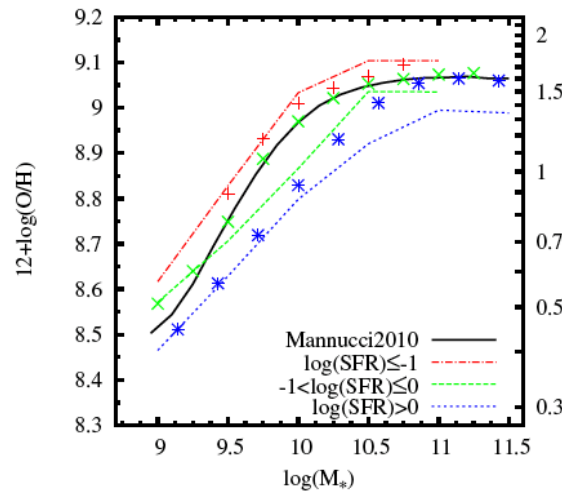
FMR and models

A feature present in many models?

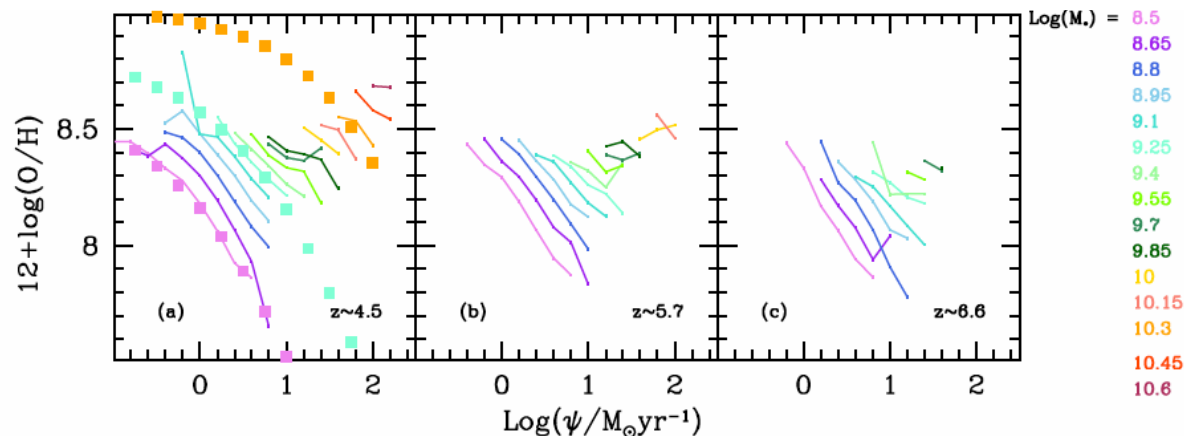
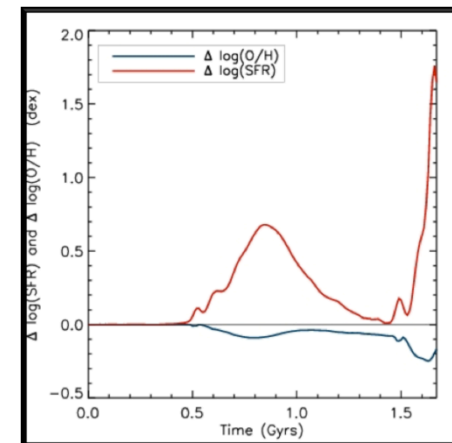
Dave' +11: equilibrium between gas accretion and gas starvation: metallicity and SFR follows **infall**



Campisi+11, Using De Lucia & Blaizot 07, Wang+08, Croton+06



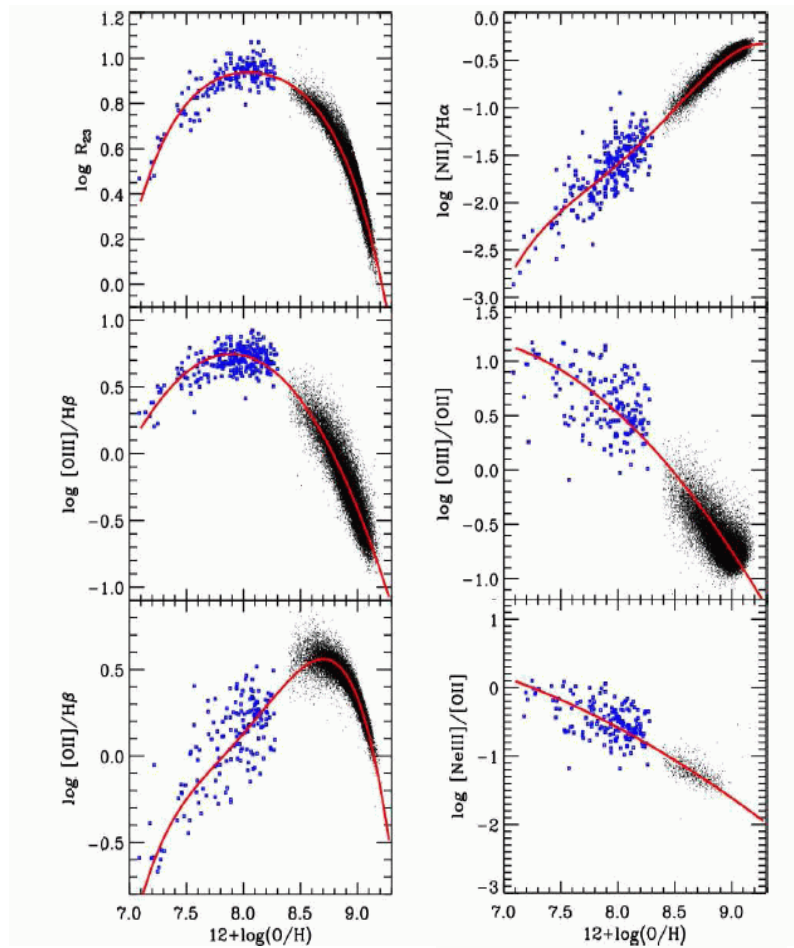
Torrey+11: evolution of SFR and metallicity during galaxy merging



Dayal+12

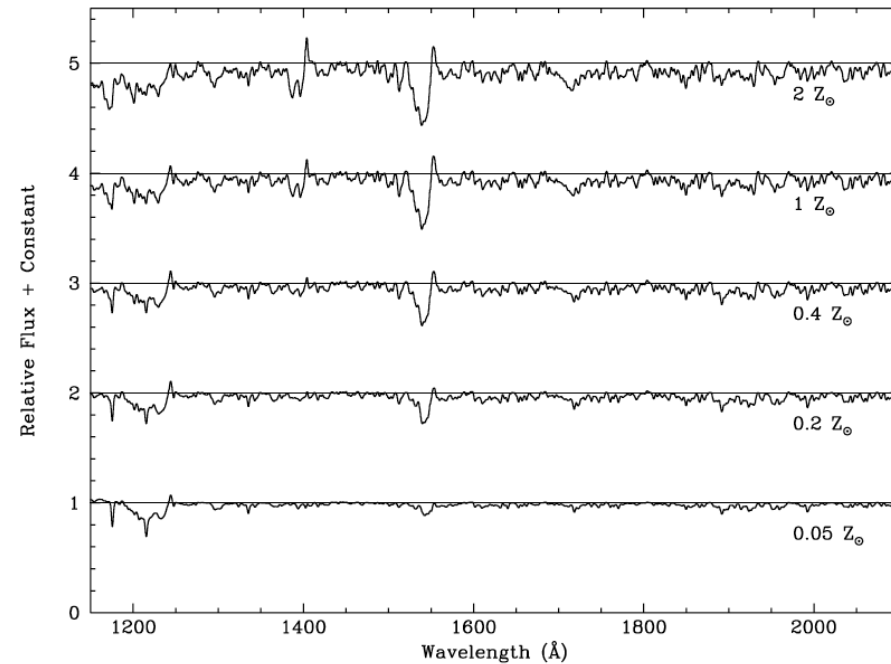
Short-wavelength observations

- Gas phase: emission lines ([OII], [OIII], H β , [NII]).....)



Maiolino et al. 2008

- Stellar metallicity: absorption lines



Rix et al. 2008

Short-wavelength observations

- Gas phase: emission lines ([OII], [OIII], H β , [NII].....)
- Stellar metallicity: absorption lines

