

Does the Fundamental Metallicity Relation Evolve with Redshift?

Two Predictions for Mass Metallicity Relation

I. Scatter about MZR

$$\Delta Z \propto -\alpha_{\min} \log \text{SFR}$$

Garcia+(2024b)

Importance of SFR in setting scatter

Does α_{\min} evolve with z ?

Strong Weak

Static		
Dynamic		

SIMBA
Illustris

TNG
EAGLE

II. Normalisation of MZR

$$\Delta \text{MZR}_{z=0 \rightarrow i} = -\epsilon_{\text{evo}} \Delta \log \text{SFMS}_{z=0 \rightarrow i}$$

Importance of SFR in setting normalisation
This Work

Does ϵ_{evo} evolve with z ?

Static Dynamic