

Dwarf elliptical galaxies as probes of galaxy formation and evolution

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24 April 2013

Galaxy Formation and Evolution

- Galaxy evolution/formation scenario must be able to predict and describe the properties of galaxies in all mass ranges.
- Different processes acting in galaxies with different masses:
 - SN/AGN feedback;
 - IMF;
 - Environment...

Elliptical Galaxies



dwarfs



M (M_{\odot})

$5 \cdot 10^8$

$1 \cdot 10^9$

$1 \cdot 10^{10}$

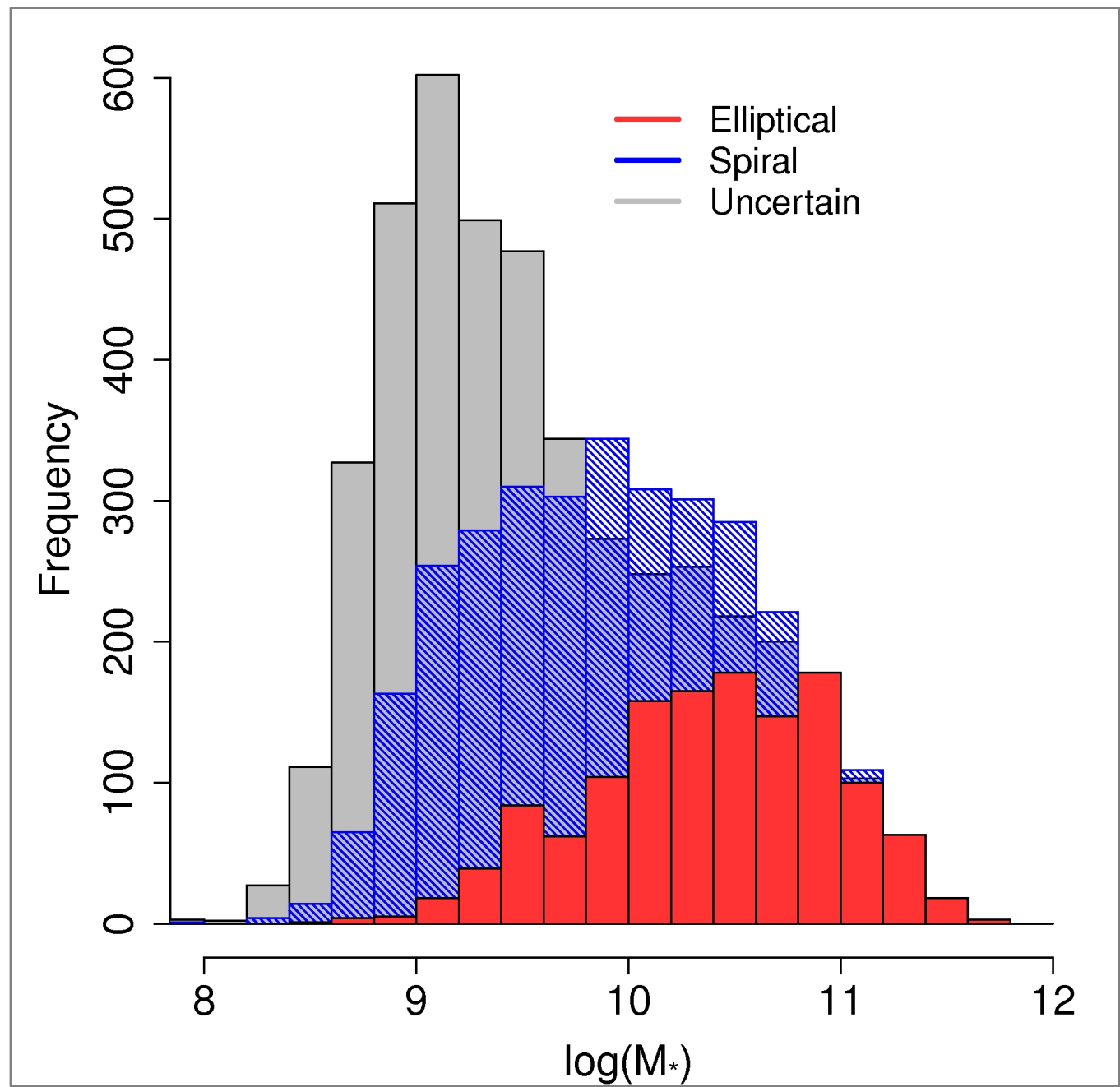
$1 \cdot 10^{11}$

$5 \cdot 10^{11}$

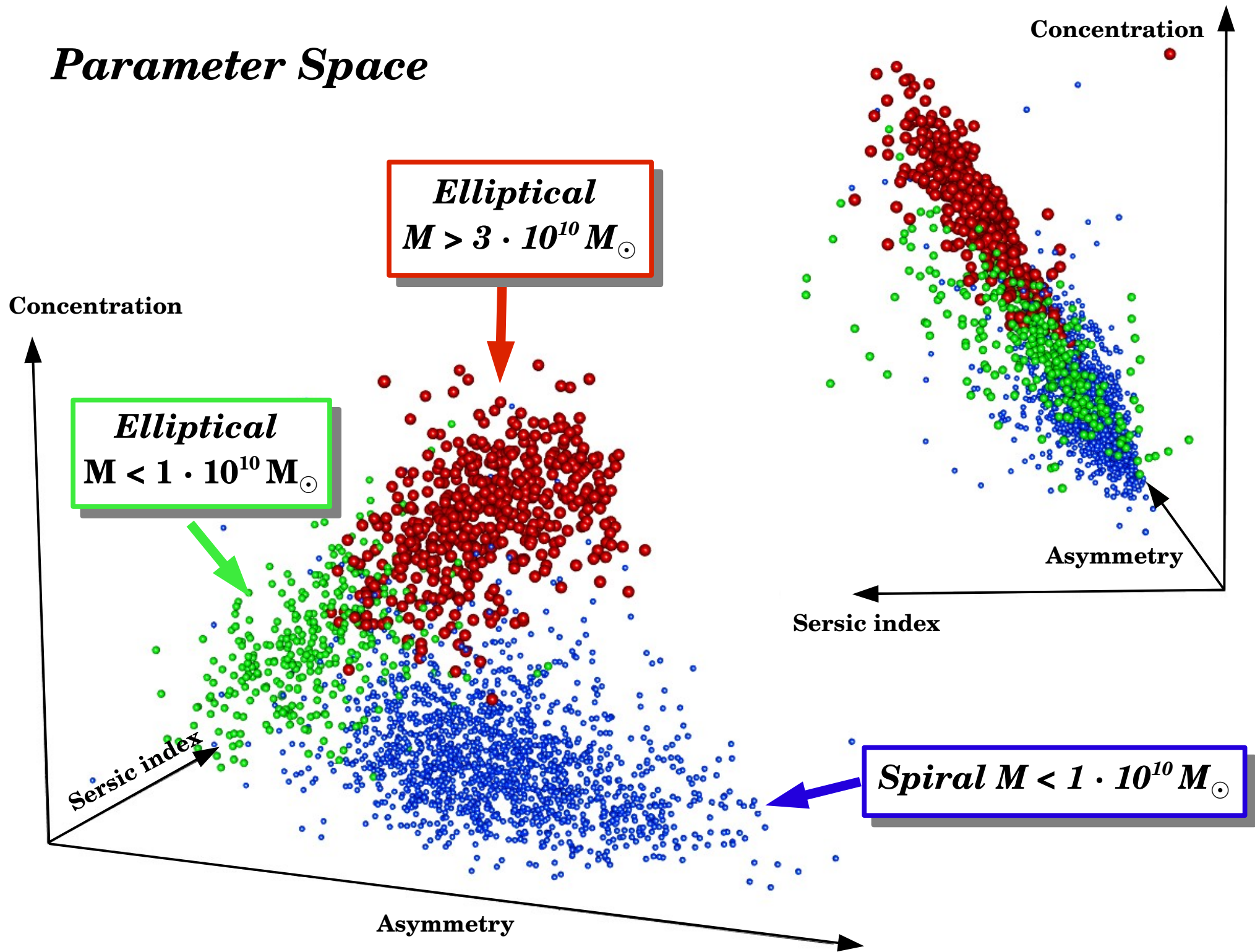


Visual Classification

Galaxy Zoo
Project



Parameter Space

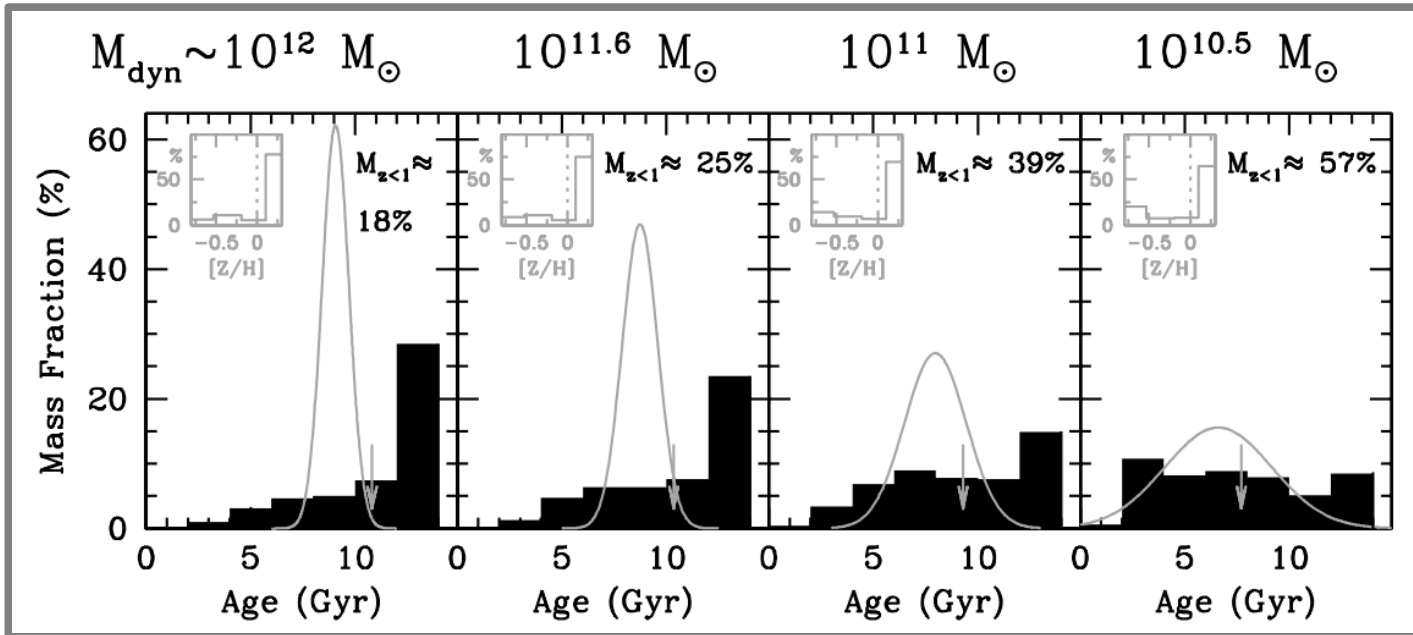


Formation and Evolution of Dwarf ETGs

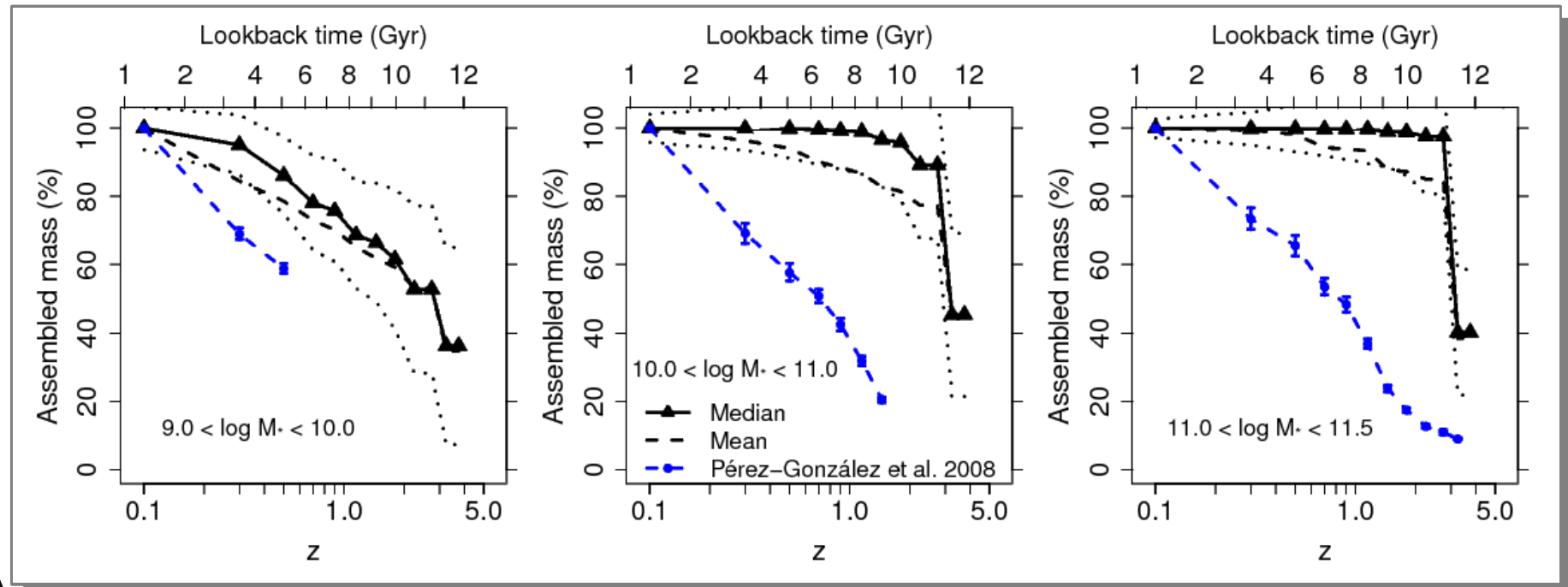
- Dwarf sample:
 - Stellar population analysis → Star formation history, chemical enrichment

Mass Assembly

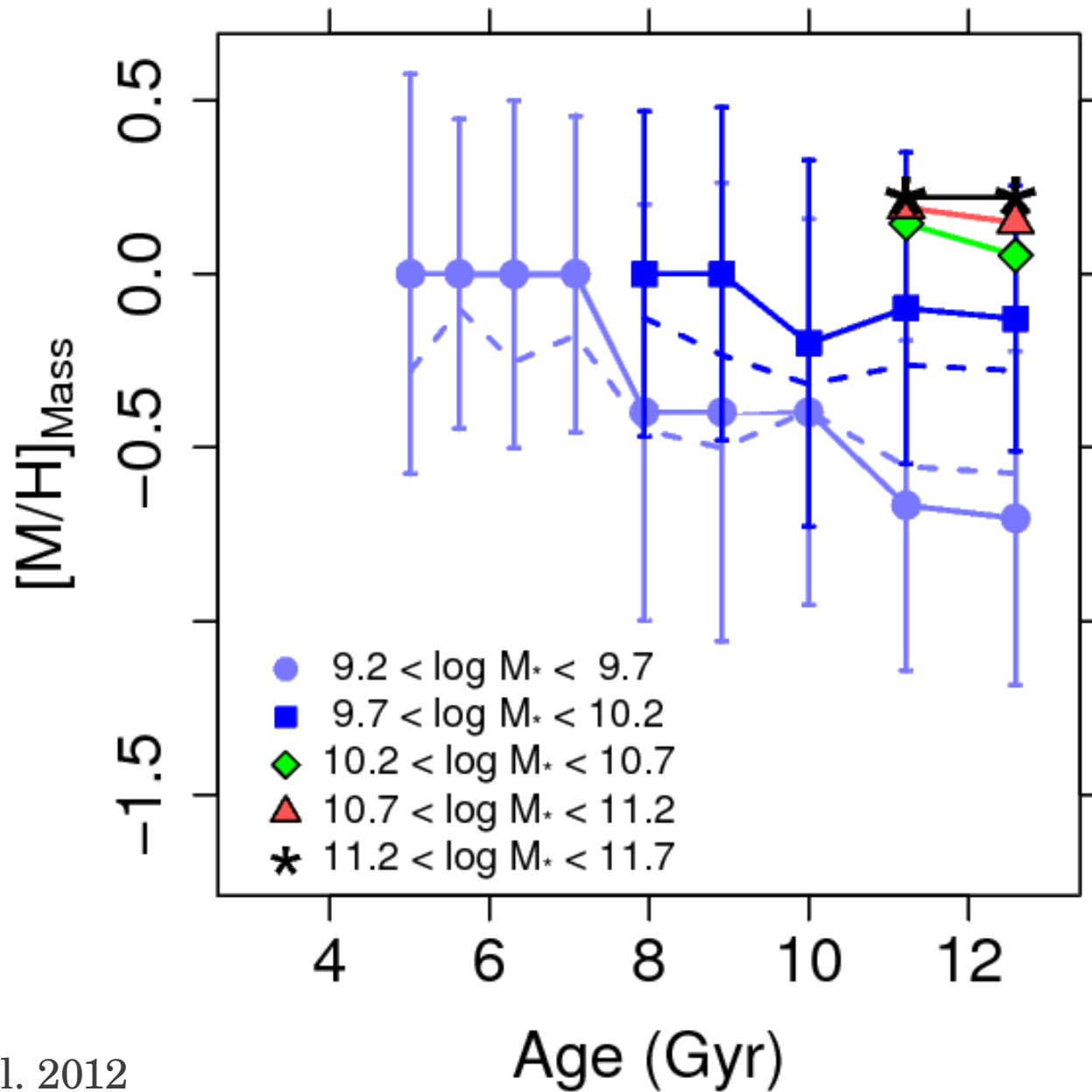
de la Rosa et al. 2011



Trevisan et al. 2012



Chemical Enrichment

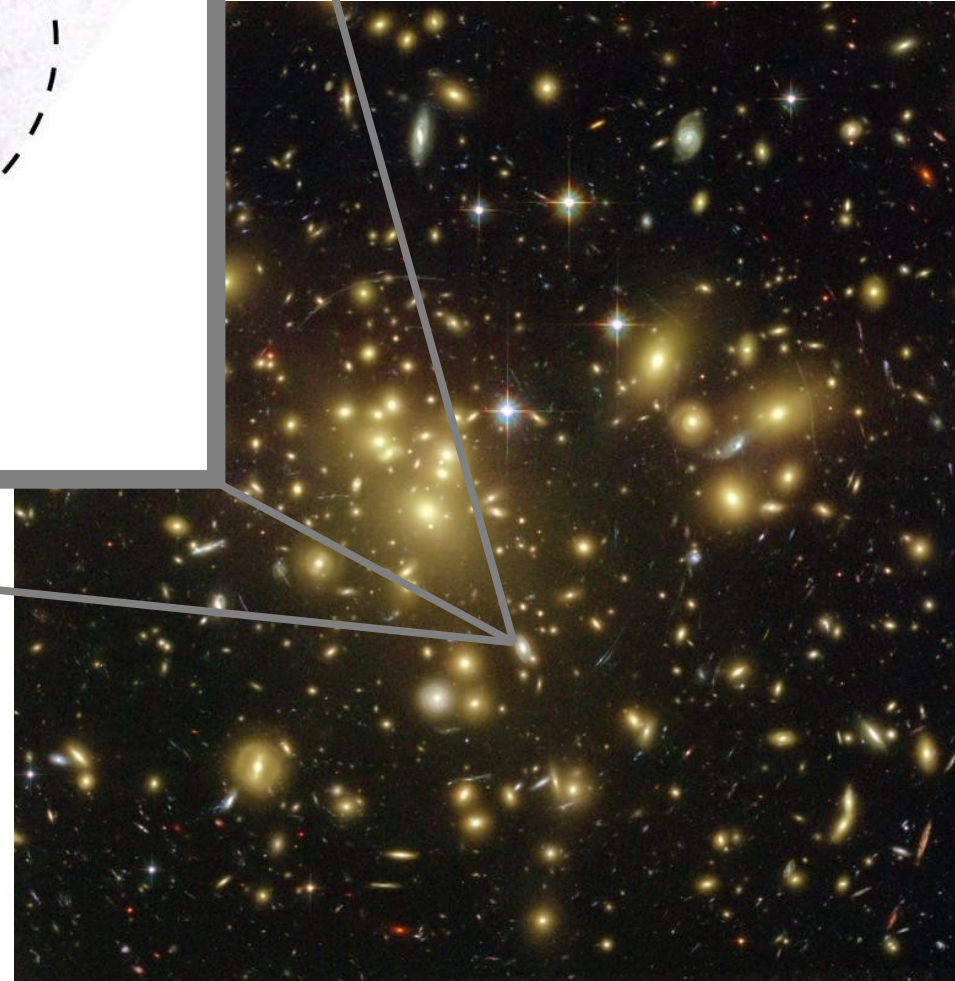
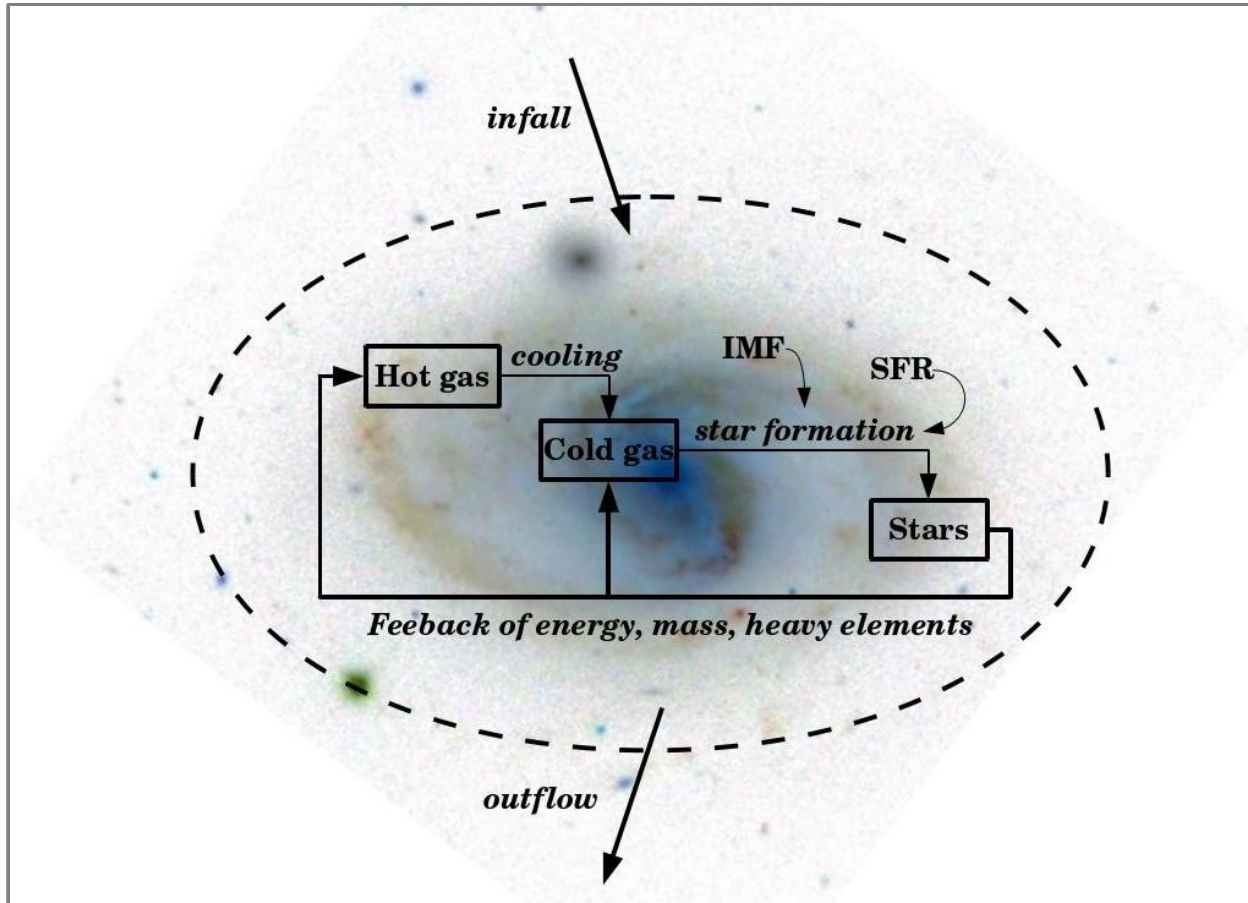


Formation and Evolution of Dwarf ETGs

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 - Different environments

Formation and Evolution of Dwarf ETGs

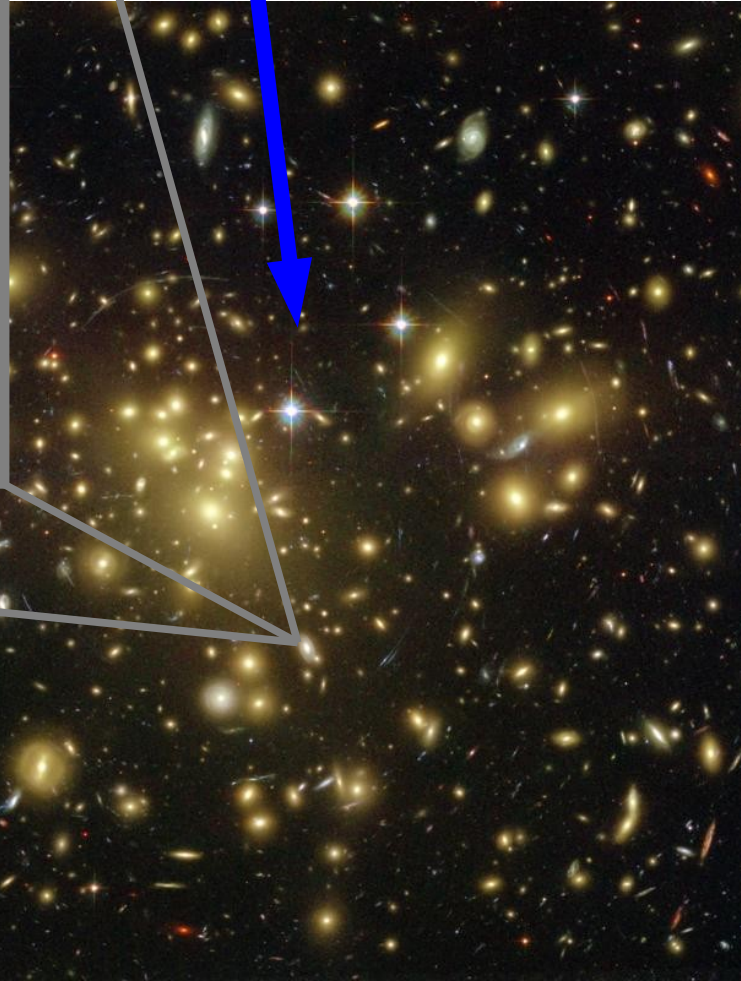
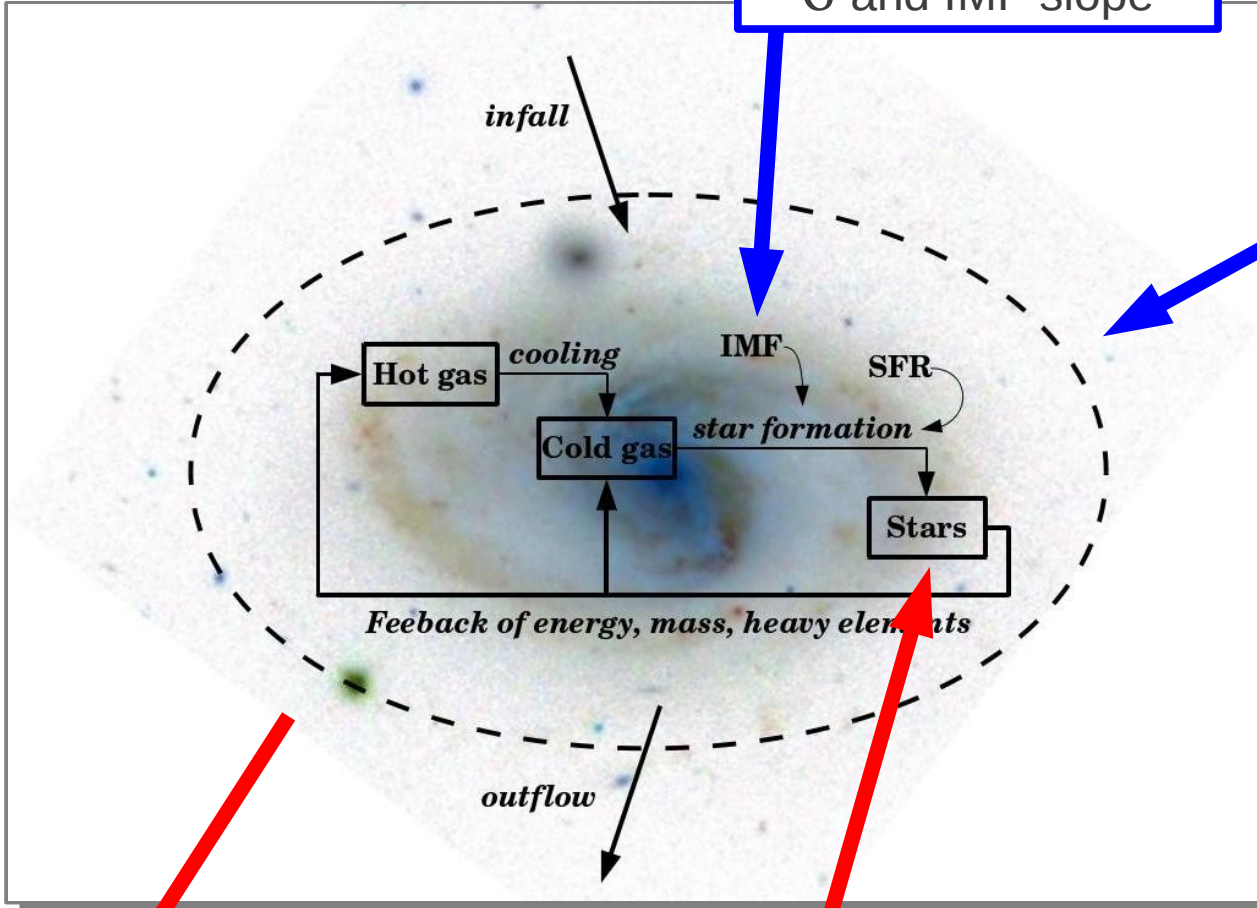
- Dwarf sample:
 - Stellar population analysis → Star formation history, chemical enrichment
 - Different environments
 - Explore stellar population properties in the outer regions



Correlation between σ and IMF slope

Correlations between galaxy properties and evolutionary stage of groups

2012



Radial gradients with VLT data

2013

→ Web-Starlight
 → SSP models with variable chemical abundances

Thank you!