

Evolution of galaxy dynamics over the last 10 Gyrs with MUSE/VLT

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June 11, 2019



Morphology at $z > 0.5$ different from the local Universe.

Kinematics more disturbed.

Why ?

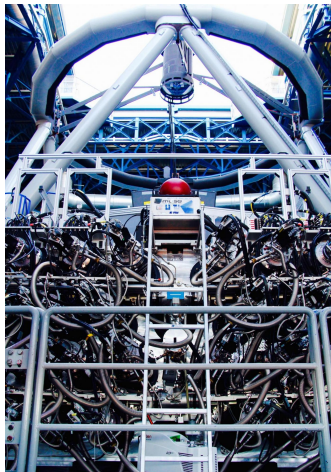
- ▷ Impact of the environment on the kinematics ? On the morphology ? How do they scale with each other ?
- ▷ Which physical processes are shaping galaxies ?
 - Which is/are dominant ?
 - How to identify them ?
- ▷ Origin of quenching ?
- ▷ Ancestors of local giant spirals ?

IFS:

- ▷ 3D cubes (2D spatial + 1D spectral)
- ▷ photometry + kinematics

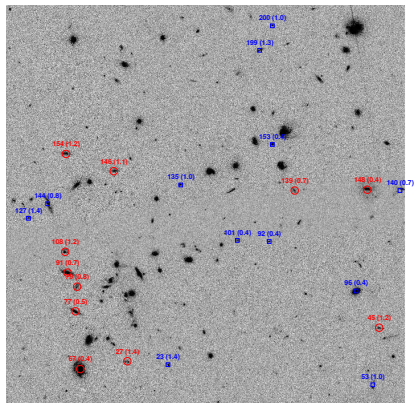
MUSE:

- ▷ $1 \times 1 \text{ arcmin}^2$ FoV
- ▷ 0.2 arcsec spatial sampling
- ▷ spectral range
[4650 Å, 9300 Å]
- ▷ seeing-limited or AO observations



MUSE instrument. Credit:
Contini Thierry (IRAP)

Our sample



HST image of COSMOS group
CGr30

- ▷ 16 MUSE fields in COSMOS area
- ▷ exposures from 1 to 10 hr
- ▷ seeing-limited ($\text{FWHM} \lesssim 0.7''$) or AO ($\text{FWHM} \lesssim 0.5''$)
 - *deep* and *best_seeing* observations
- ▷ ~ 500 field galaxies with [OII] detection
 - HST-ACS counterparts
 - $0.4 \leq z \leq 1.4$

Checking a couple of parameters

A need for reliable morphological parameters

Morphological parameters are useful for

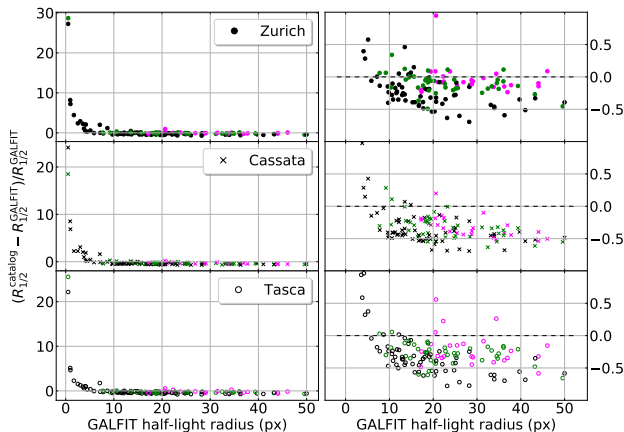
- ▷ the morpho-kinematics comparison
- ▷ **the kinematical model**

The two most important are

- ▷ a size measure to select resolved galaxies
 - half-light radius $R_{1/2}$
- ▷ the ellipticity
 - compute the inclination from $\cos i = 1 - e$
 - used as a fixed input for the kinematical model

Checking a couple of parameters

Half-light radius



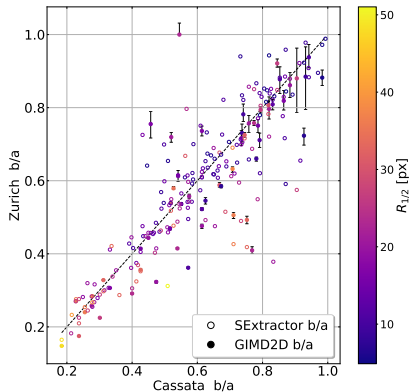
spheroidal disk-like irregulars

GALFIT run by V.
Abril-Melgajero
(LAM) on
structure galaxies

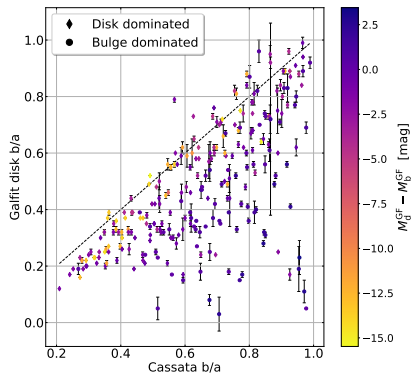
▷ GALFIT
radius used as
a reference

Checking a few parameters

Ellipticity



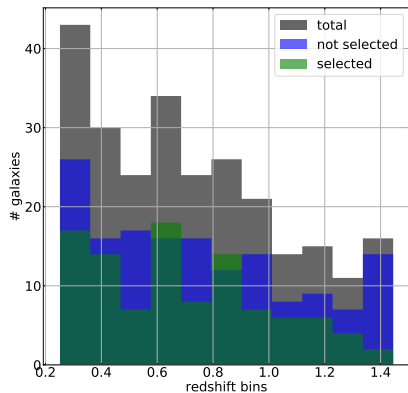
▷ values are consistent between catalogues



▷ scatter is due to bulge dominated (spherically symmetric) systems

Characteristics of our sample

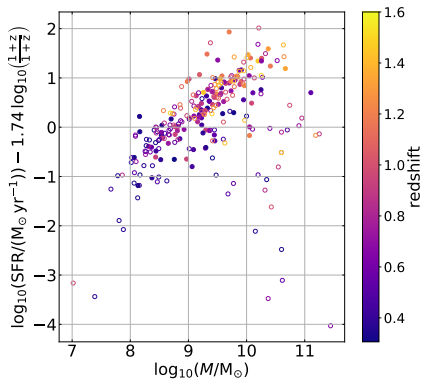
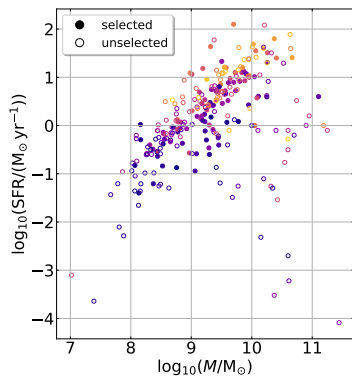
Redshift distribution



- ▷ sample of **103 galaxies** with $R_{1/2} > 0.35''$ and $\text{SNR} > 5$
- ▷ we loose galaxies at $z \approx 1.4$
- ▷ redshift distribution is not drastically changed

Characteristics of our sample

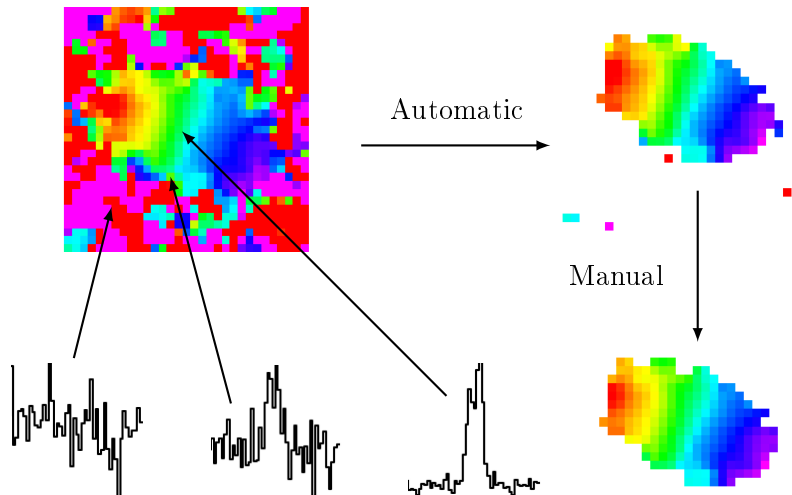
Mass-SFR relation



- ▷ Most of our sample galaxies are on the main sequence
- ▷ massive quiescent and low [OII] and very low mass galaxies are lost

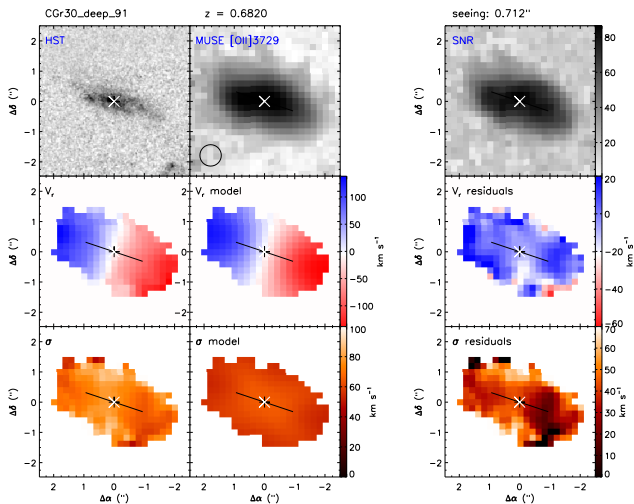
Kinematical modelling

Cleaning galaxies



Kinematical modelling

Fitting a model



First results

V_{\max}/σ_v distribution

