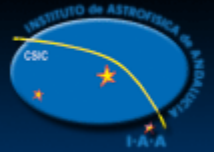
SFR and structure of A2125

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Properties of Abell2125

RA 15h 40m 58s DEC 66d 18m 28s

z = 0.247

Abell Richness 4

INTERESTING POINTS:

- Suspected high star formation activity: Large emision in radio (Owen et al. 2004)

- Cluster merger showing clumpy emision in X-ray & Dynamic substructure

Scientific Purpose

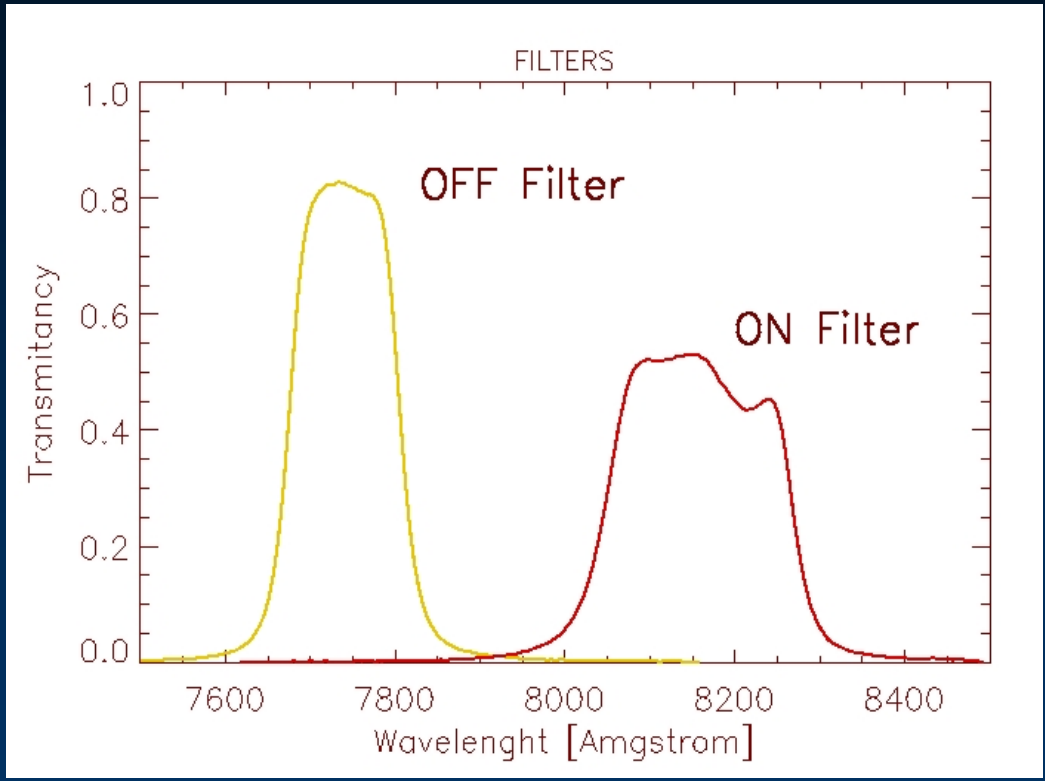
Study of SFR by means of Hα luminosity

of a sample of cluster member of A2125

with known redshift and large emision in radio (Miller et al. 2004)

OBSERVATIONS

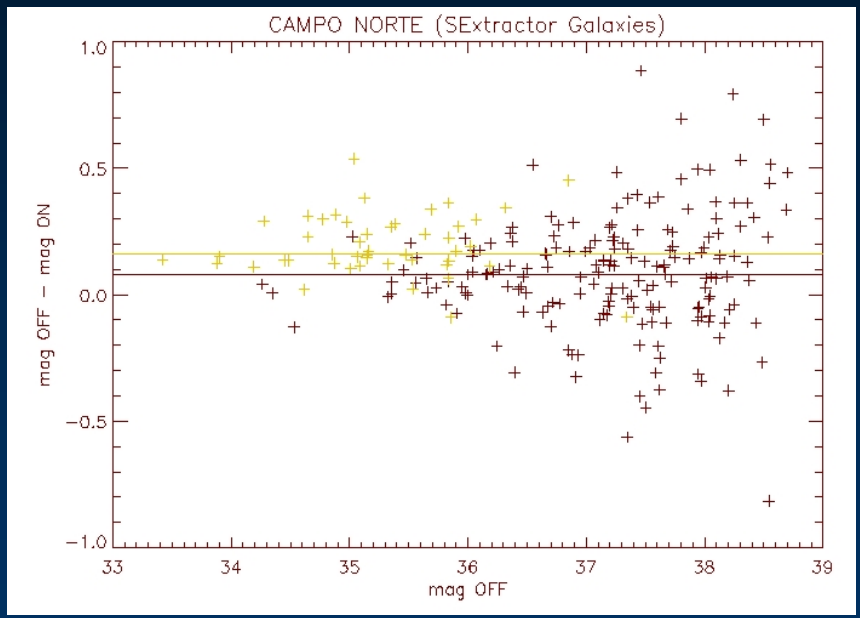
- - 2.2m (CAFOS) at CAHA (June 2004)
- - ON-band (816 μm) & OFF-band (774 μm) imaging

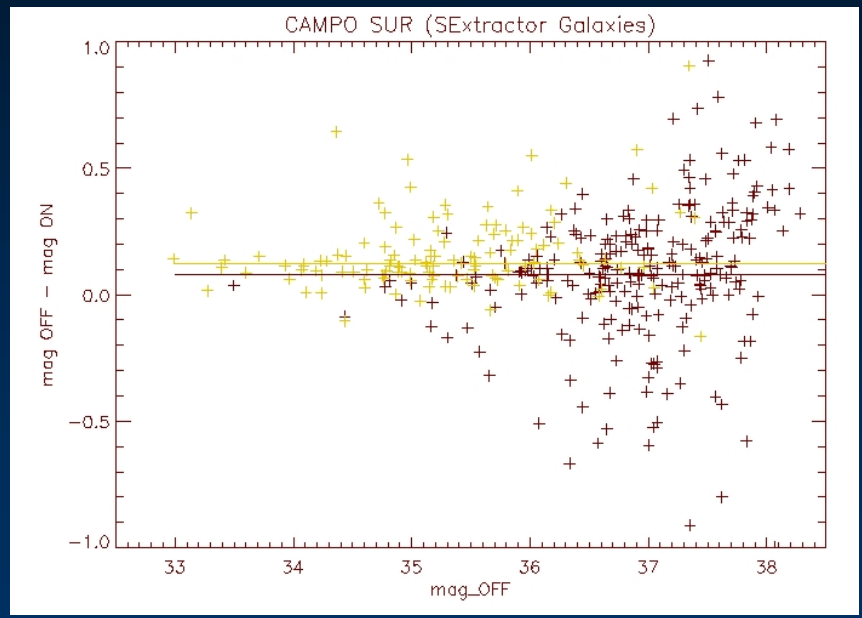


Two fields of 15 arcmin diameter each other:
"North" field in the outskirts of the cluster
"South" field in the core of the cluster

Emision Line Properties of the sample

- Data reduction in a standard way (Bias,Flat, ...etc)
- Extraction of sources and photometry with SExtractor





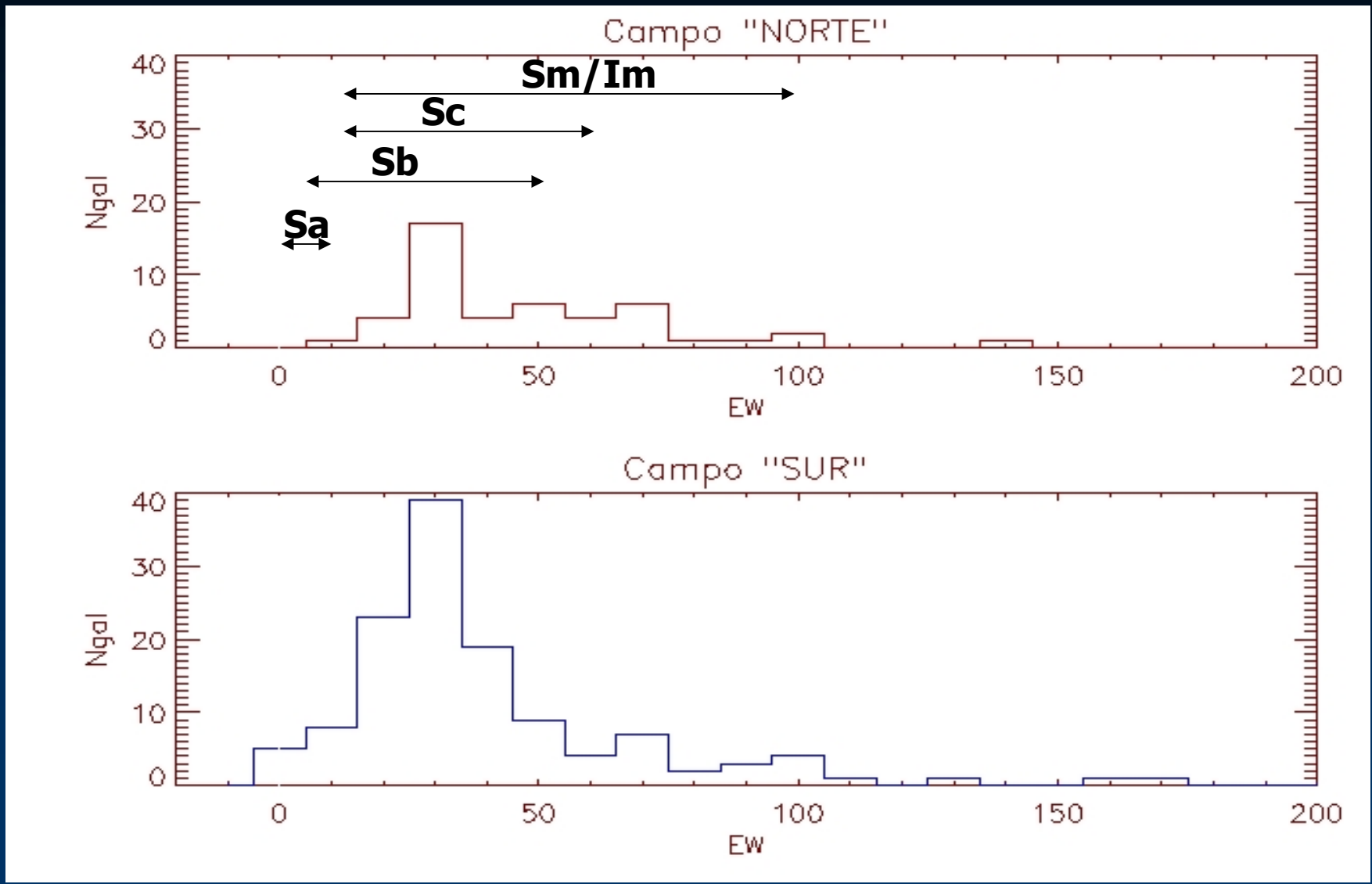
"North" field

The sample <mag OFF –mag ON>=0.08
The rest <mag OFF –mag ON>=0.17

"South" filed

The sample <mag OFF –mag ON>=0.08
The rest <mag OFF –mag ON>=0.12

Star Formation Activity



SFR: Radio vs L(Hα)

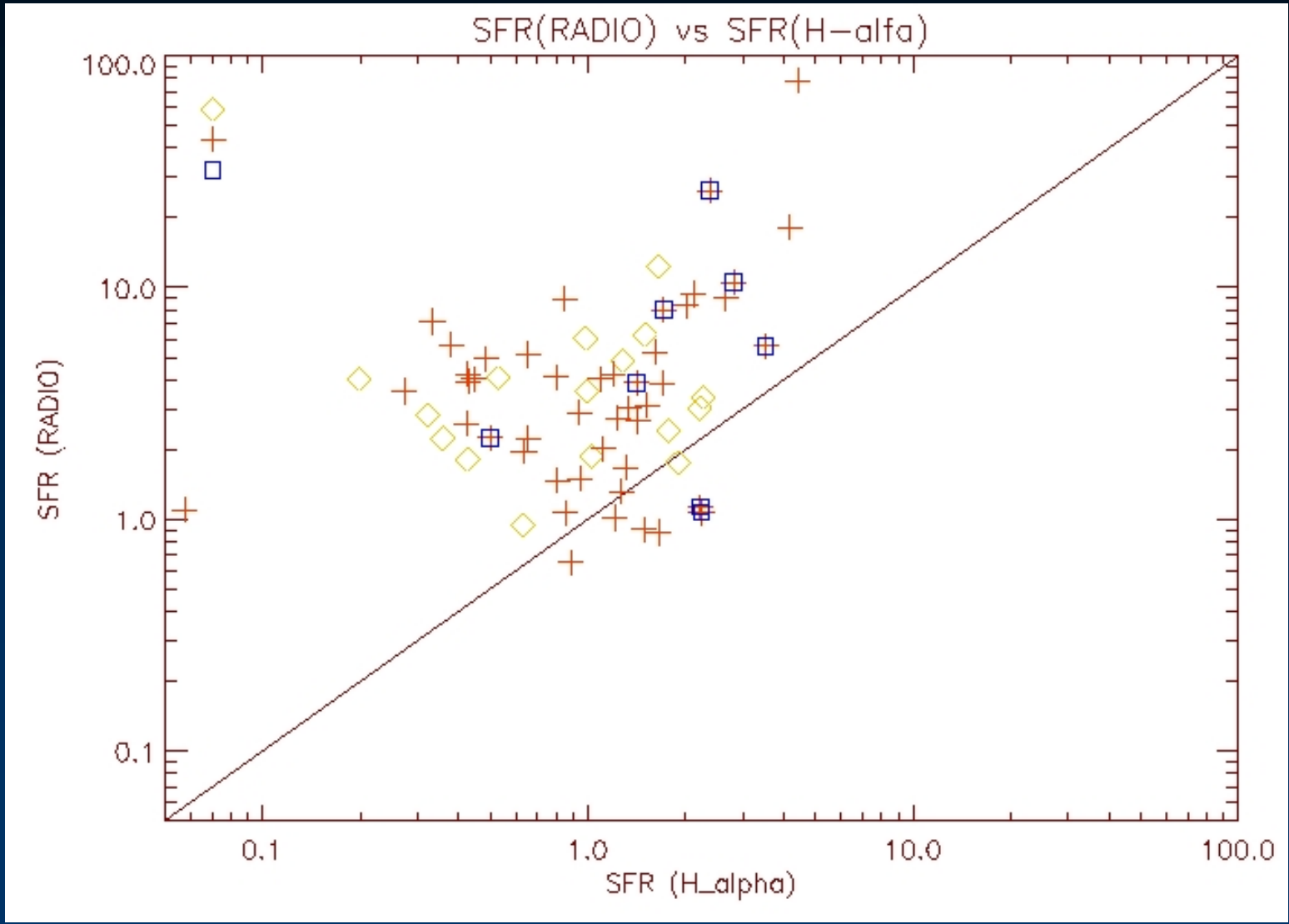
Hα LUMINOSITY (dust extintion => lower limit to SFR)
Kennicutt IMF [M_{low}=5M⊙, M_{up}=100M⊙] Z=Z⊙

L(Hα)[ergs^{-1}] = 4.4 10^{34} SFR (Condon, 1992)
¡¡Caution: internal dust attenuation => lower limit to SFR

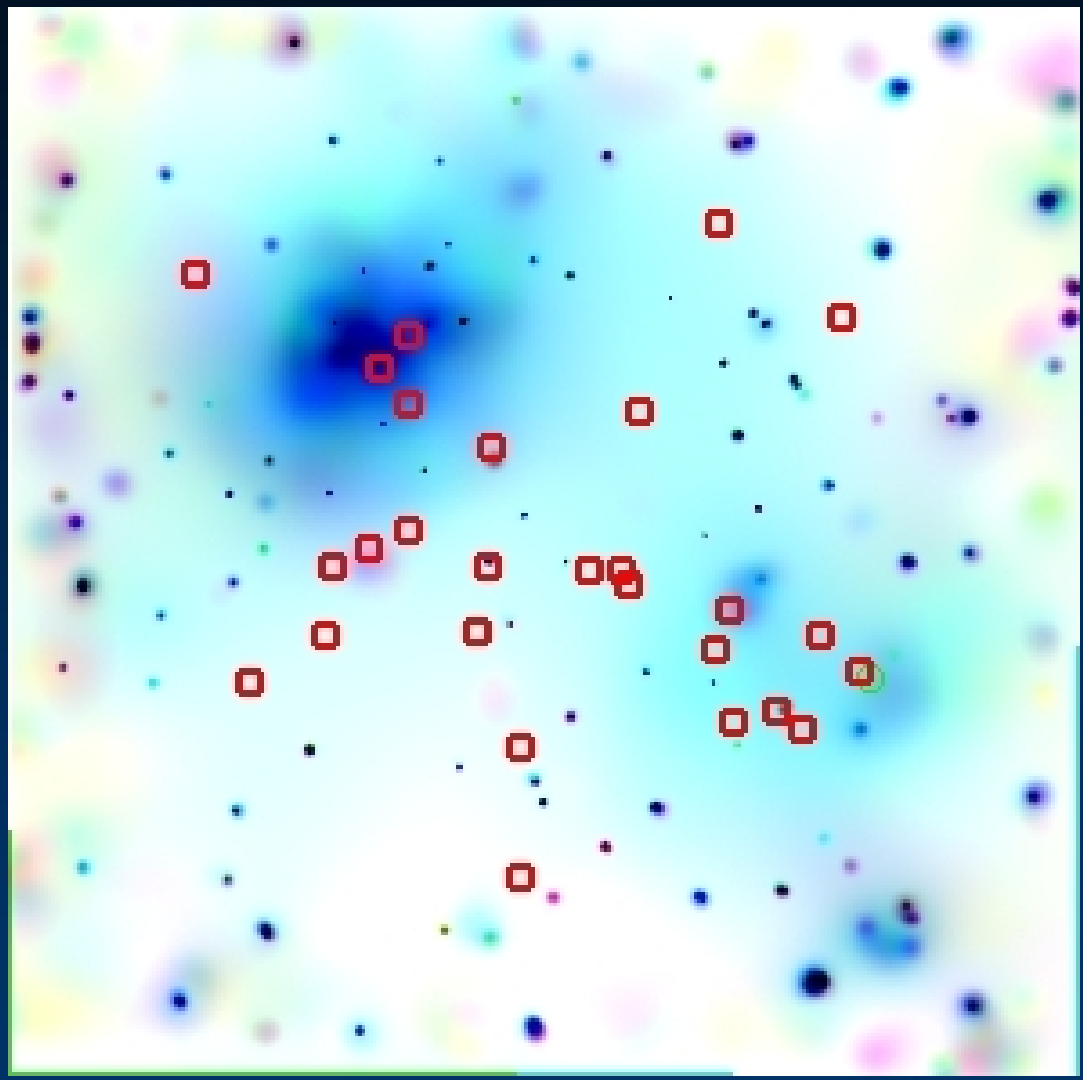
RADIO (non extintion)
Miller-Scalo IMF [M_{low}=5M⊙**,** Mup=100M⊙] Z=Z⊙

L_{NT}[WHz^{-1}] ~ 5.3 10^{21} υ$^{-0.8}$[GHz] SFR (Condon, 1992)
LT[WHz^{-1}] ~ 4.4 10^{20} υ $^{-0.1}$[GHz] SFR (Condon, 1992)

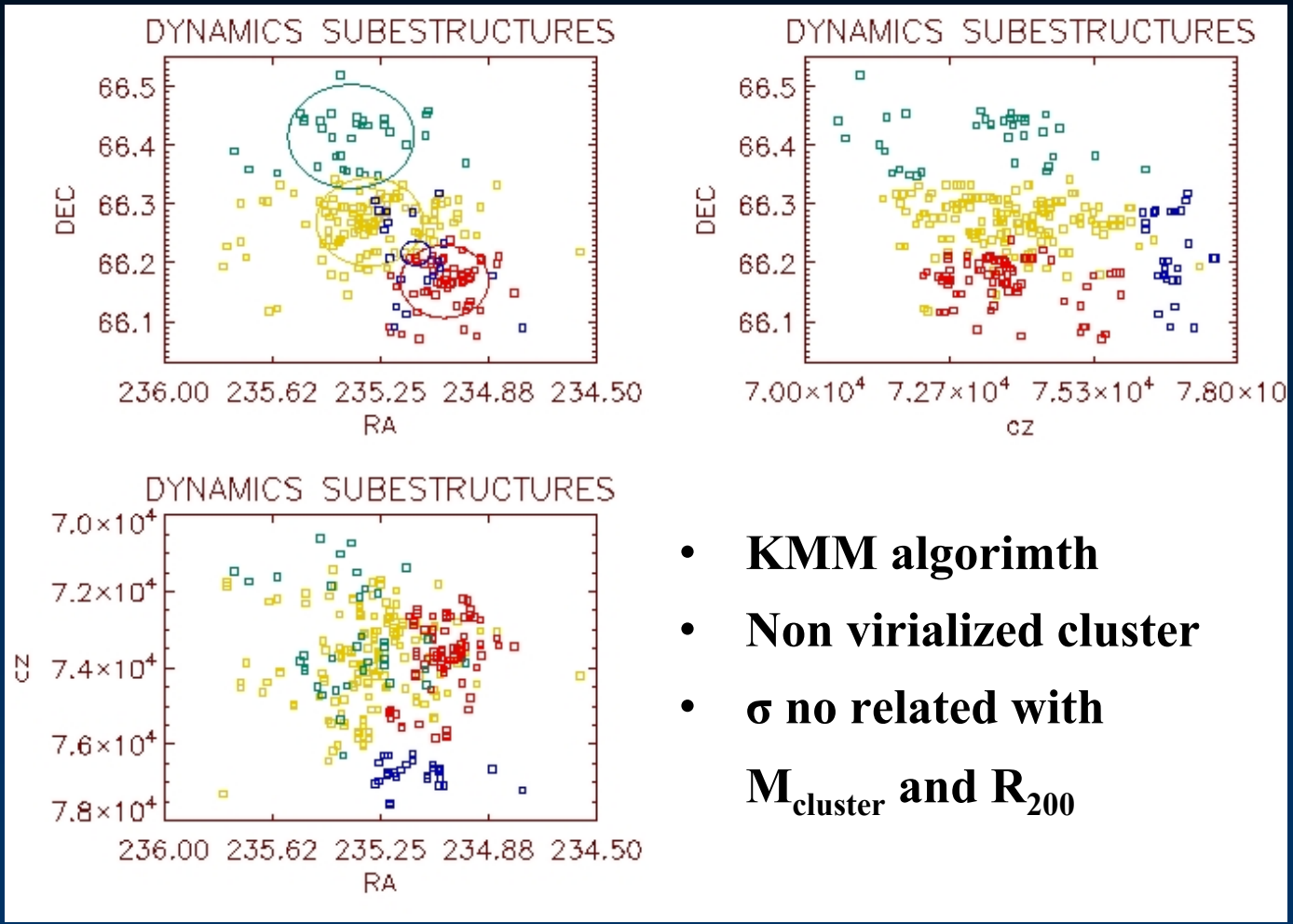
SFR: Radio vs L(Hα)



EW vs X-ray emision

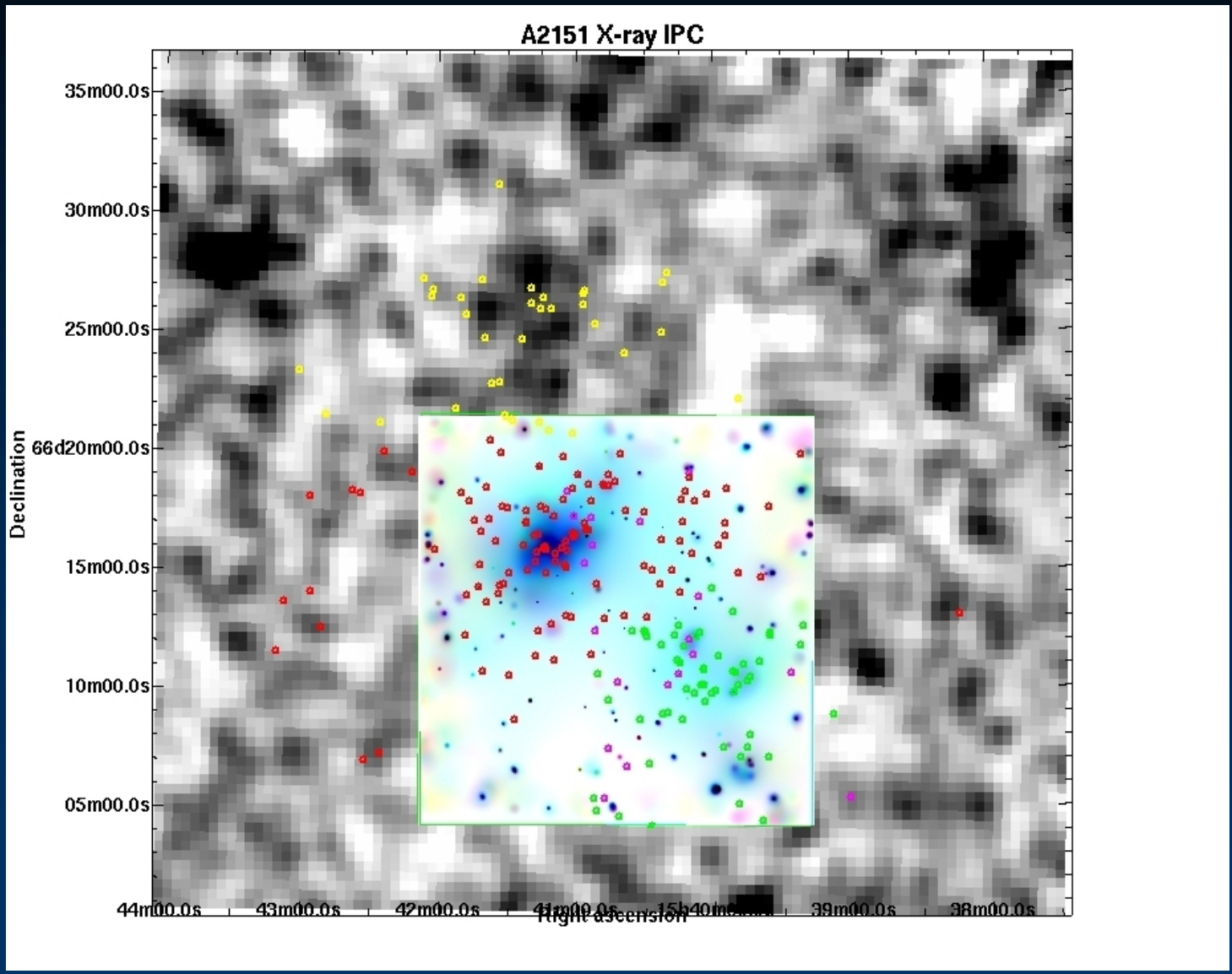


Dynamical substructure

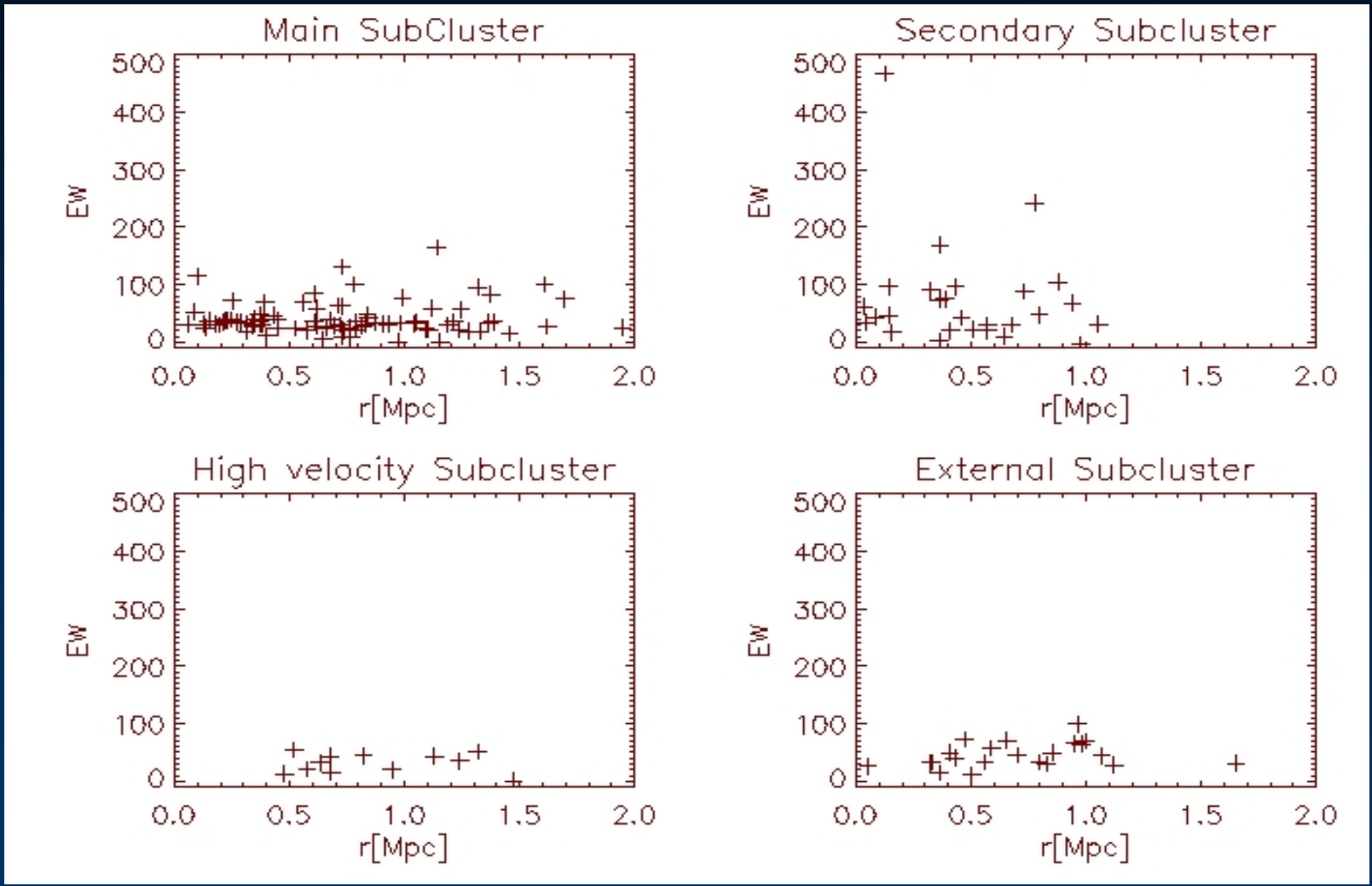


- **KMM algorimth**
- **Non virialized cluster**
- **σ no related with $M_{cluster}$ and R_{200}**

X-ray vs Dynamical Substructures



EW vs r[Mpc] (subestructures)



KMM algorithm

- This algorithm divides a system into a specified number of components and calculates the Gaussian distance (using both positions and velocities) of each galaxy to each component.The galaxies are assigned to their nearest component, new means and dispersions for the positions and velocities of each component are calculated, and the procedure is repeated. The algorithm converges when the assignments are stable

Work in progress...

- Luminosity function at i' to check completeness of the sample.
- Density of SFR per unit...
- Figuras del CAIRNs y Finn...

Color-magnitude diagram’s stars