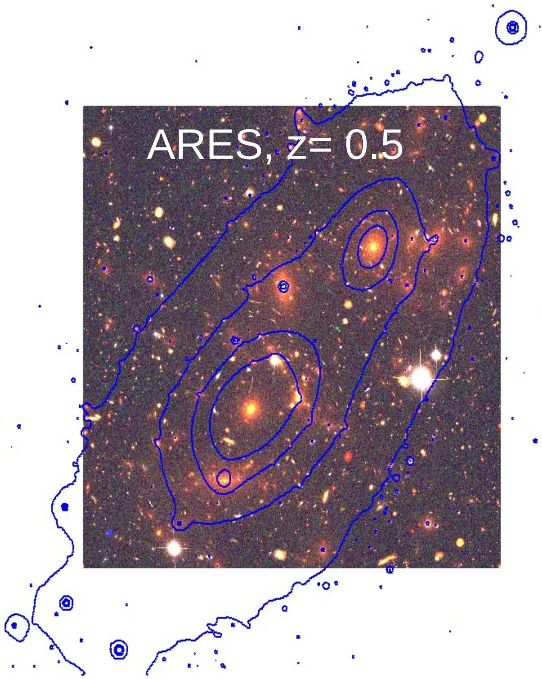
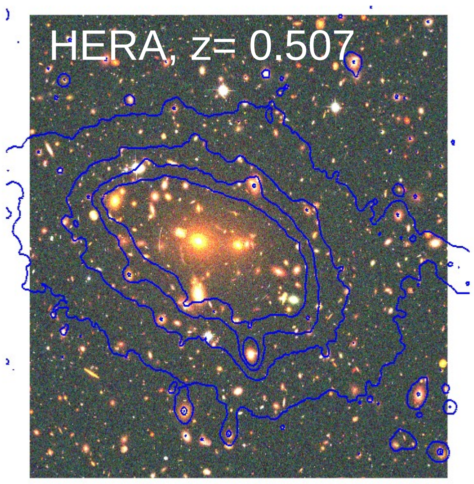
FF- simulation ARES & HERA clusters





<u>Simulations</u>:
(Meneghetti et al., 2016)

- ARES is a semi-analytical cluster *(using MOKA by Giocoli et al., 2012a)*

- HERA is a N-body simulated cluster *(see Planelles et al., 2014)*

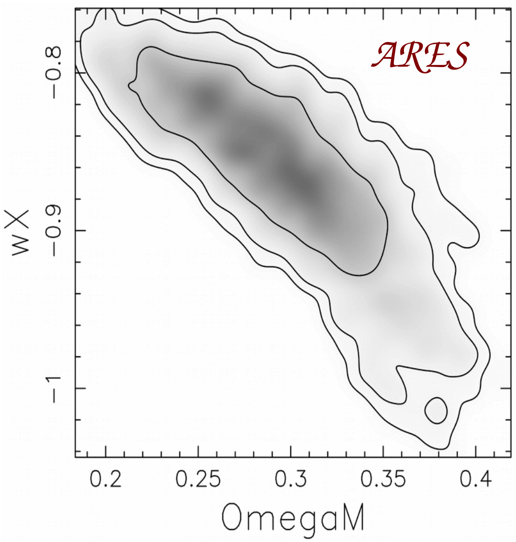
- Bimodal complex clusters

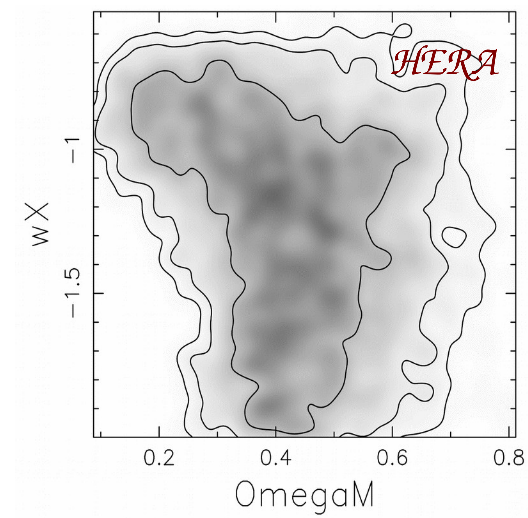
- Cluster galaxies & multiple images catalogues provided

- zspec for all multiple images

Cluster name	z	Cluster galaxies	Images
ARES	0.5	330	242
HERA	0.507	337	65

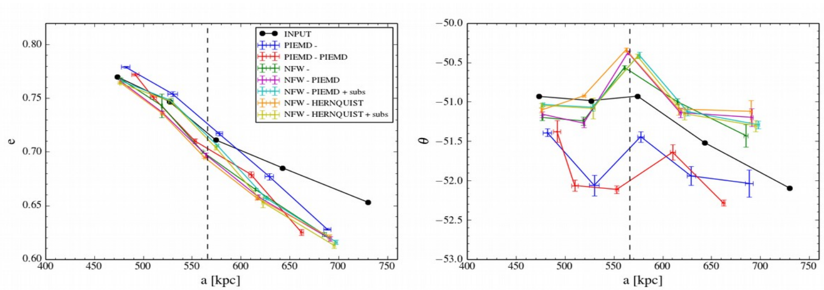
Quantifying the effects of systematics errors on the modelling

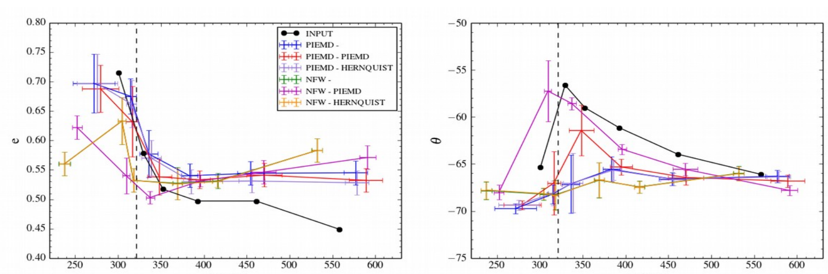




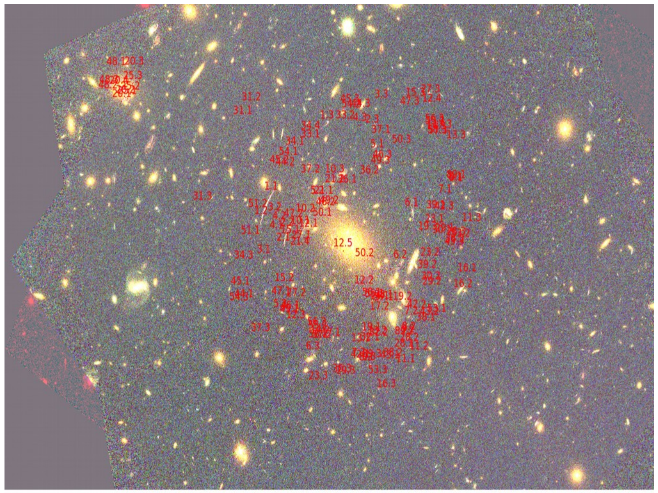
Model ID	Model	RMS(")
1	PIEMD - no BCGs	0.69
2	PIEMD - PIEMD	0.87
3	NFW - no BCGs	0.75
4	NFW - PIEMD	0.65
5	NFW - PIEMD + SUBS	0.57
6	NFW - HERNQUIST	0.91
7	NFW - HERNQUIST + SUBS	0.68
8	NFW - PIEMD + shapes	0.77

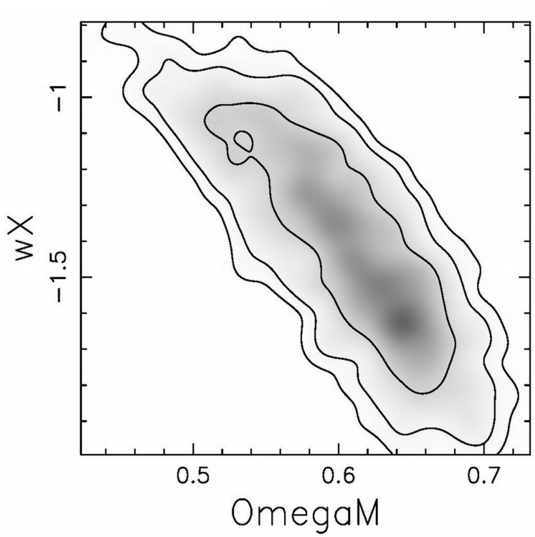
Model ID	Model	RMS(")
1	PIEMD - no BCGs	0.99
2	PIEMD - PIEMD	0.95
3	PIEMD - HERNQUIST	0.96
4	NFW - no BCGs	1.23
5	NFW - PIEMD	1.06
6	NFW - HERNQUIST	1.22





Frontier Fields Cluster A1063





BIASED !

Strong Lensing model:

(Clément et al., in prep)

- One main PIEMD DM clump
- One central PIEMD BCG
- A North East external shear
- 151 multiples images
- Whom 51 with zspec

(determined by Balestra+13; Richard+14; Vanzella+16; Johnson +14; Boone+13; Caminha+15; Karman+16)

RMSi ~ 0.72''

(for now…)

Work in Progress:

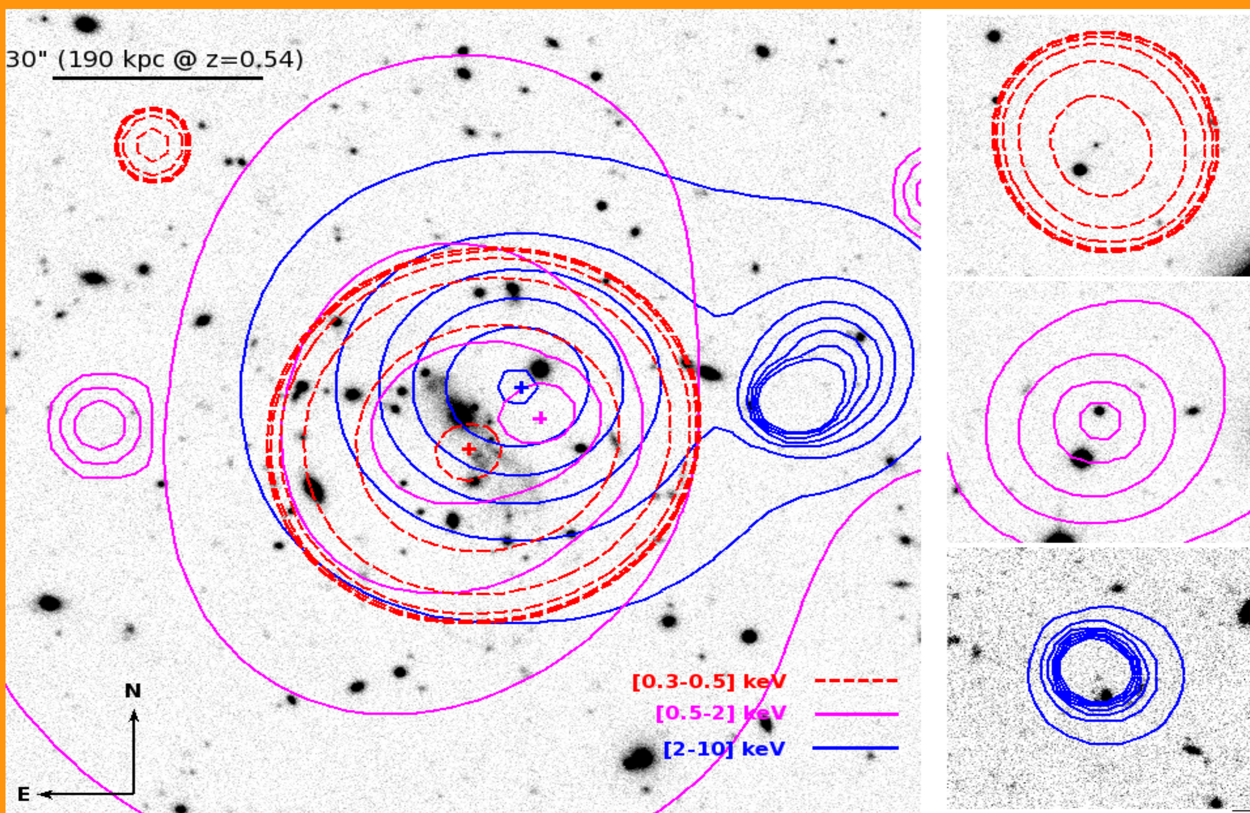
- Analysis of the sensibility of multiple images
- Taking into account lensing by line of sights

Diffuse light in n0308

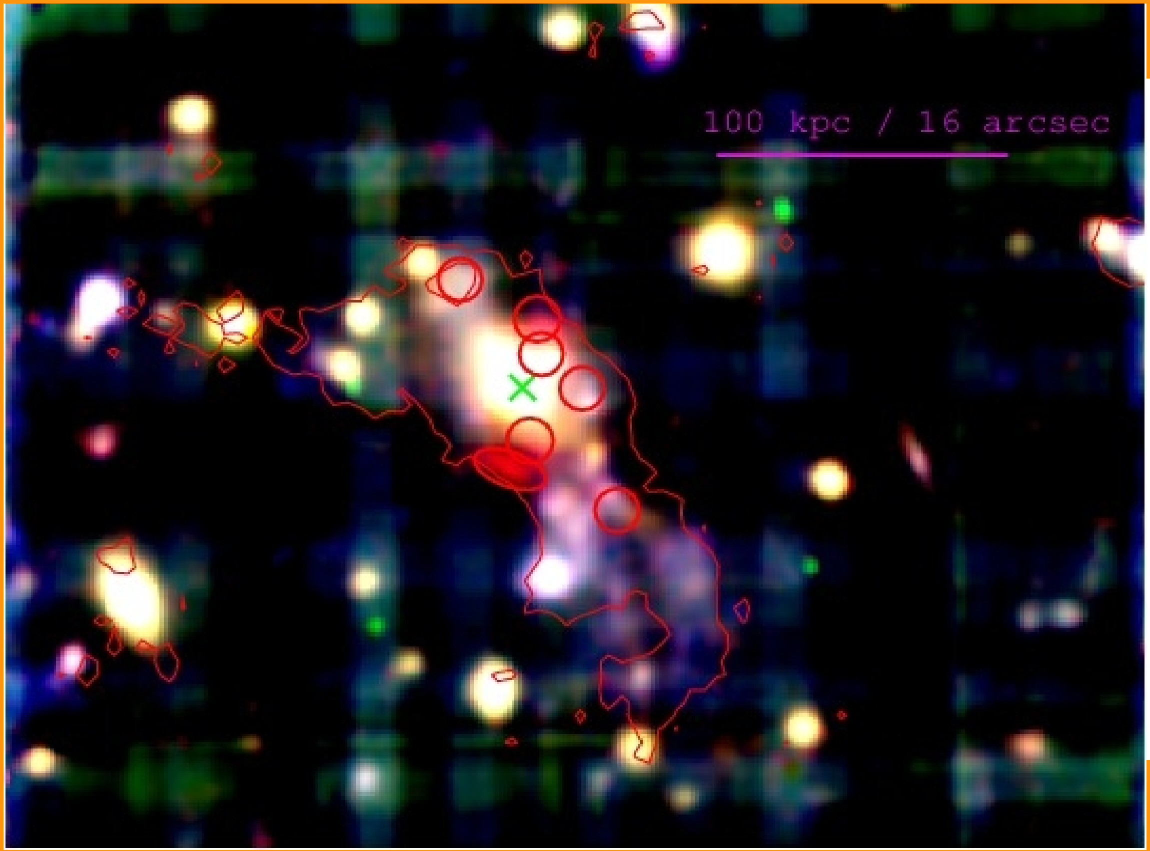
z=0.53

~500 kpc

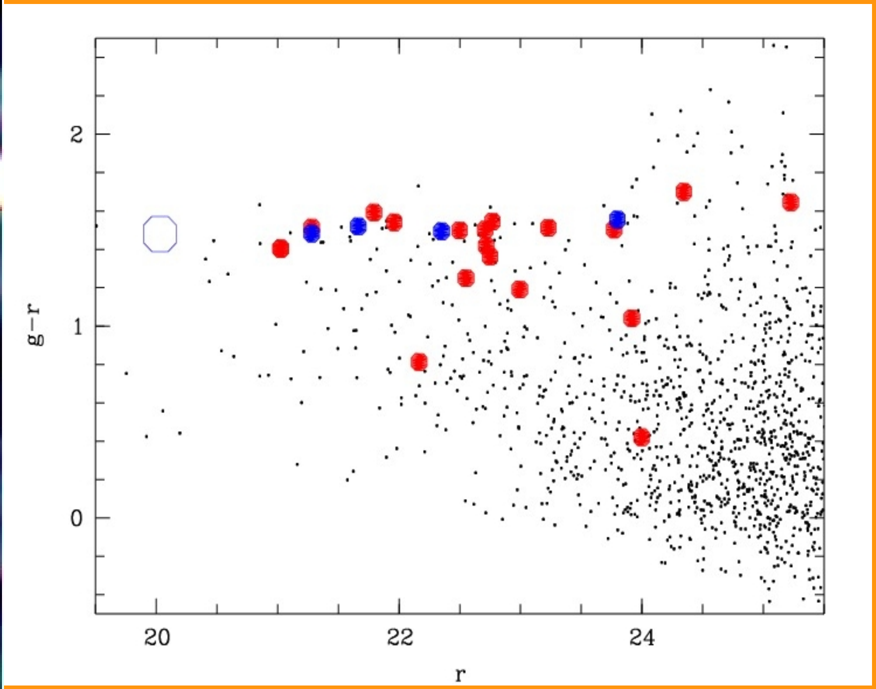
Complex X-ray structure



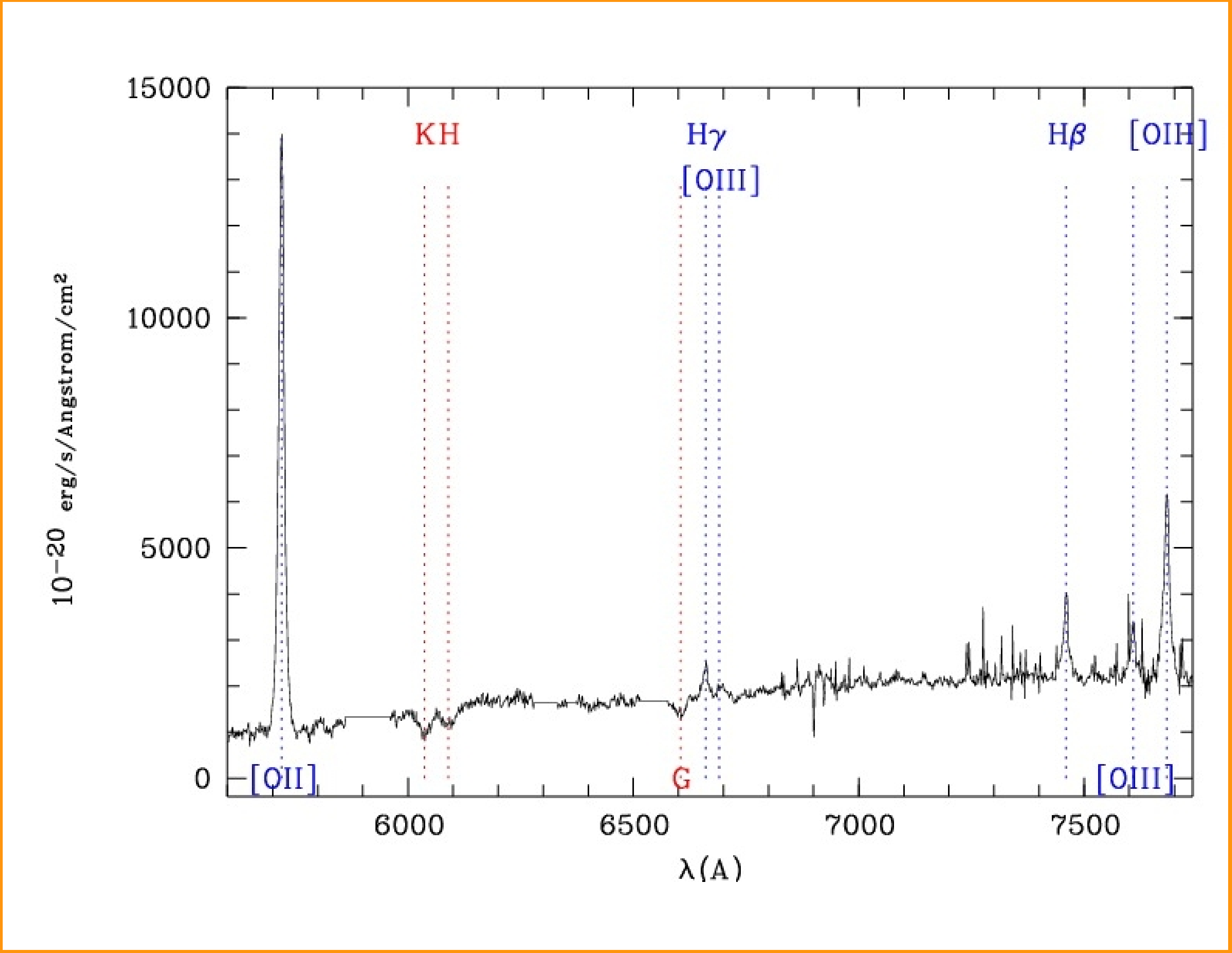
Cluster with the largest known amount of diffuse light <=> 2 cD galaxies



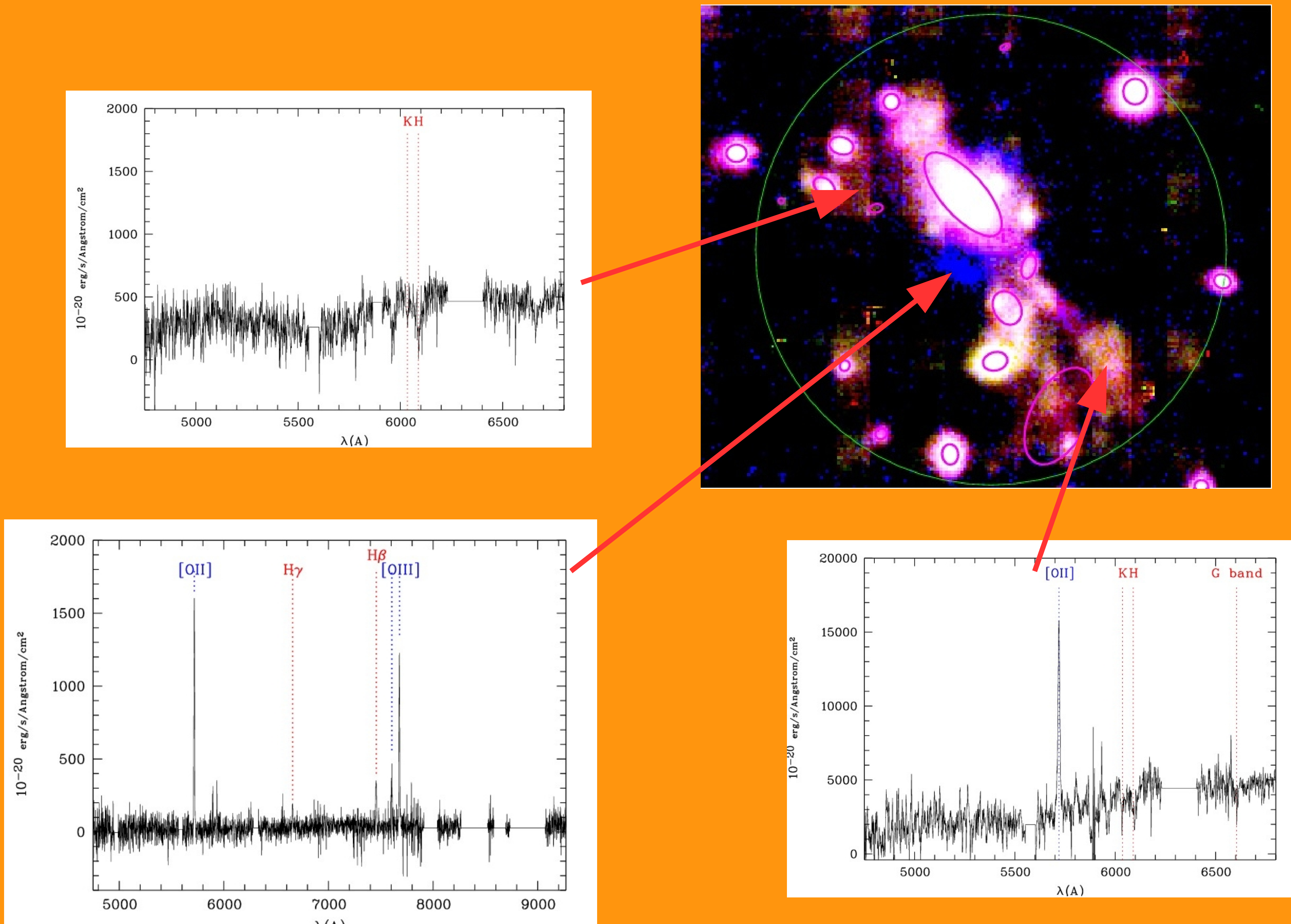
MUSE redshifts



Atypical dominant galaxy

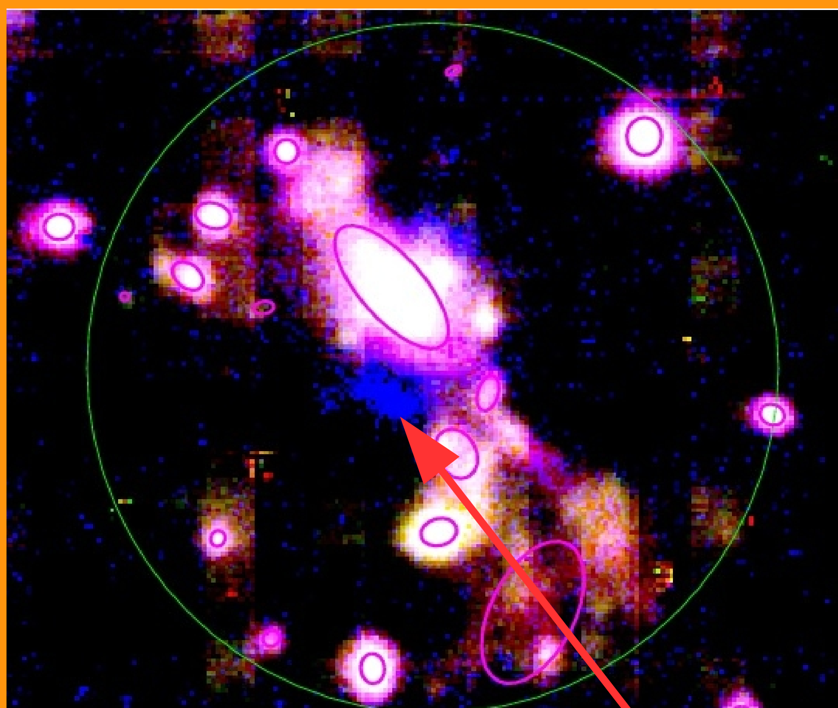


First time we get spectra for diffuse light

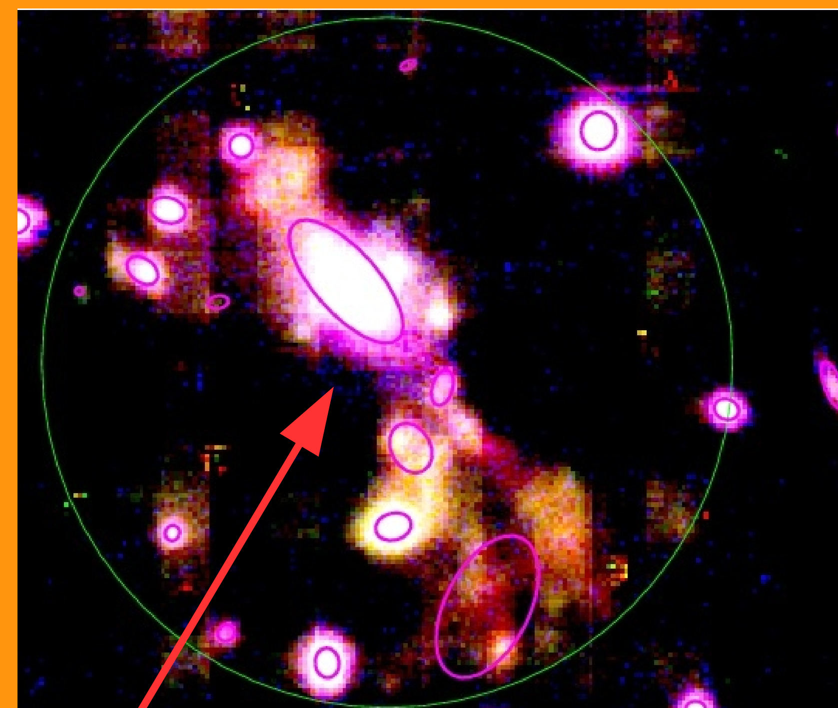


Very Balmer-poor regions

R V [OIII]



R V Hbeta



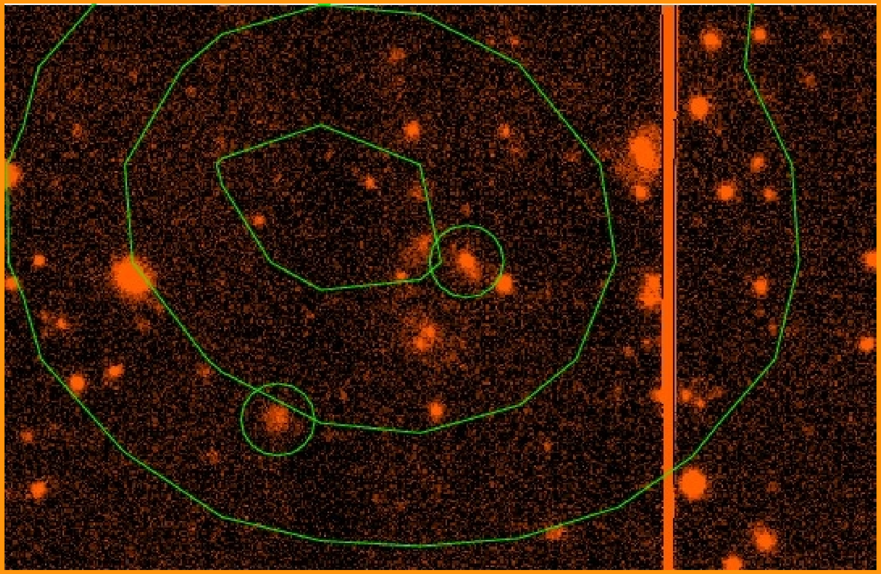
Shock-dominated ionisation process ?

What's next ?

- Map X-ray gas metalicity : 206 ksec XMM : priority C

- other clusters for MUSE? n0282 at z=1.2

~500 kpc



Lia Athanassoula

The kind of work I have been doing:

Simulations, mainly of the evolution of disc galaxies, but also of the formation of discs and of their structures. The aim is to understand the principal dynamical processes determining galaxy evolution.

Study of barred galaxies and of the secular evolution they drive

Simulations of isolated and interacting systems, galaxies in groups or clusters.

My simulations include not only stars and dark matter, but also gas and its physics, like star formation, cooling and feedback. More recently I have introduced chemical evolution in the simulations, so that I can study e.g. abundances of various elements. This is essential for comparing with GAIA data and with data from the various related spectroscopic surveys.

Study of chaos

What I am most excited about recently:

Following the work of Toomre and others, it is generally accepted that the merging of 2 disc galaxies of similar mass will give an elliptical galaxy.

We revisited this problem introducing a hot gaseous halo around each galaxy, in agreement with observations, and find that the merger remnant can in fact be a disc galaxy. Comparison of the properties of the merger remnant with those of observed disc galaxies shows good agreement. Comparisons include radial density profiles, kinematics (velocity fields, rotation curves, velocity dispersion, etc.), morphology of subtructures such as bars, rings, spirals, etc.

This will have important repercusions in many fields and should shake up many SAM models

Stéphane Basa

Alessandro BOSELLI

Research activity **Formation and evolution of galaxies** : determining observational constraints using a multifrequency analysis ; comparison with model predictions :

Star formation activity

General properties and scaling relations

Effects of the environment on galaxy evolution

3-D structure of clusters of galaxies

Physical properties of the interstellar medium

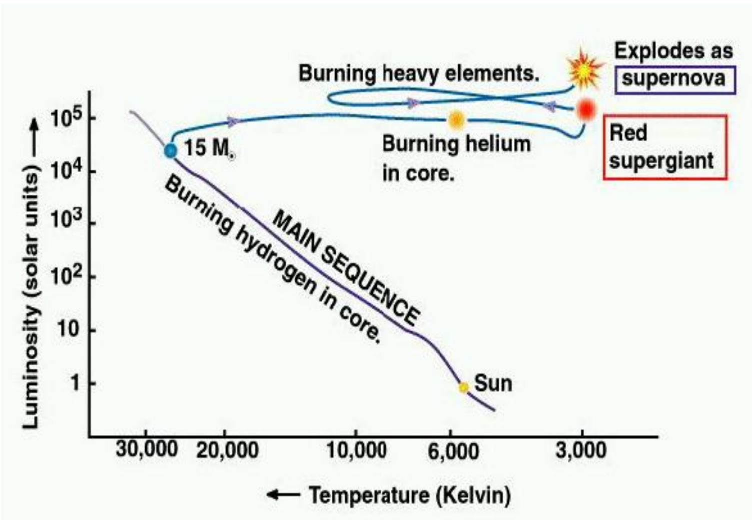
Alessandro BOSELLI

PI of the **Herschel Reference Survey** (SPIRE/ Herschel guaranteed time project)

PI of the **GALEX Ultraviolet Virgo Cluster Survey (GUViCS**; GALEX Legacy Project)

PI of **VESTIGE: A Virgo Environmental Survey Tracing Ionised Gas Emission** (CFHT LP, 50 nights allocated)

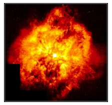
Massive Stars



$M > 8\ M_\odot$ ⟶

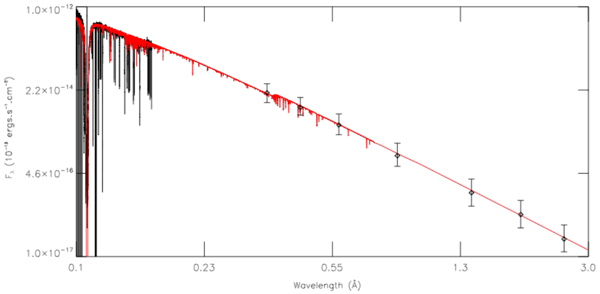
$L > 10^5\ L_\odot$ - $T_{eff} > 20000$ K ⟶

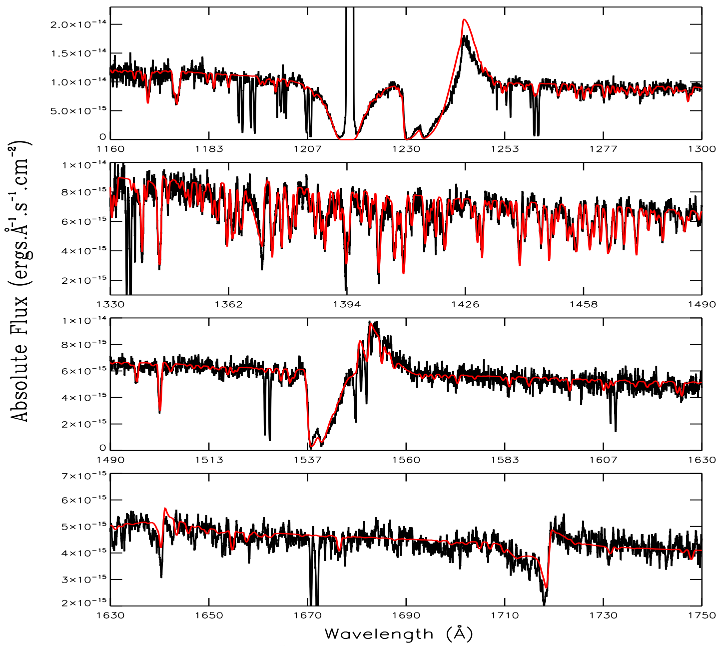
$\dot{M} \sim 10^{-5}\ M_\odot$/yr - $V_\infty \sim 3000$ km/s ⟶



Key questions and methodology

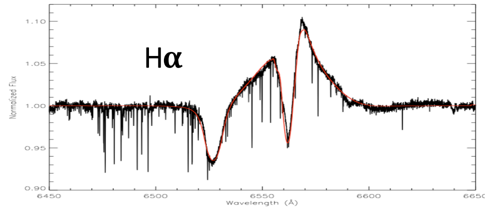
- Understand and characterize mecanisms affecting the evolution of massive stars (O, B, WRs, LBVs)
  - Stellar winds, rotation (mixing, abundances)
  - Magnetic fields
  - Binarity/late phases
- Stellar atmosphere models
- Multi-λ spectral synthesis

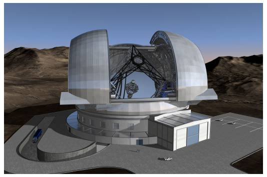


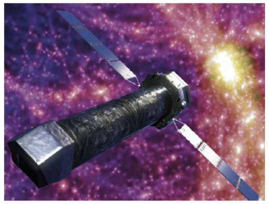


Some projects

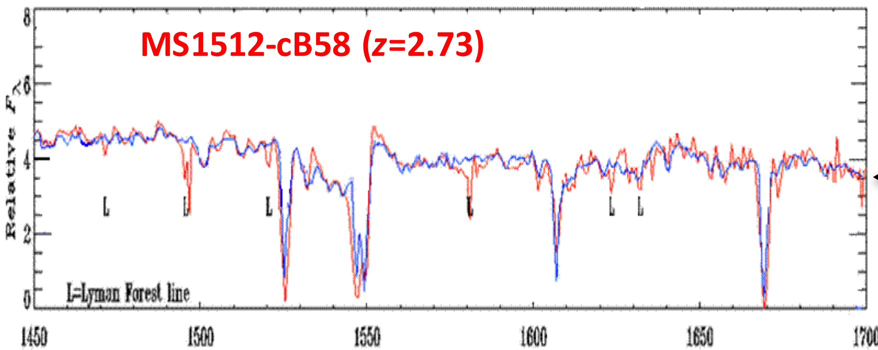
- Fast rotation at low Z (LGRBs) + SALT





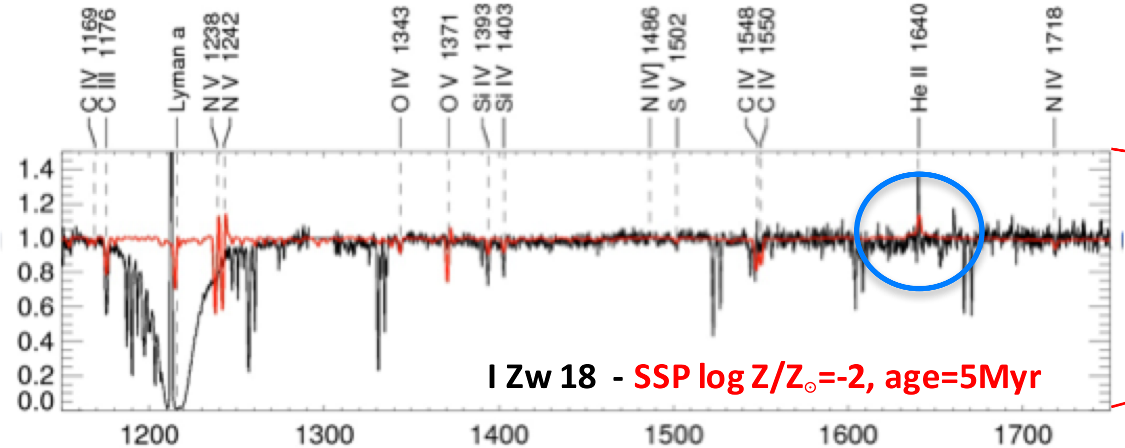


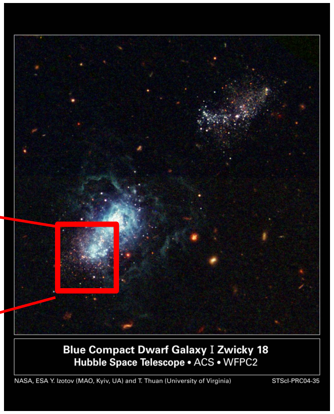
- Star formation
  - GALPSEC ➪ Grid of spectra + population/spectral synthesis



IMF: Salpeter
SFR: ~37 $M_\odot$ /an
$Z = 0.2Z_\odot$

- Massive stars at very low Z (and beyond…Pop. III)

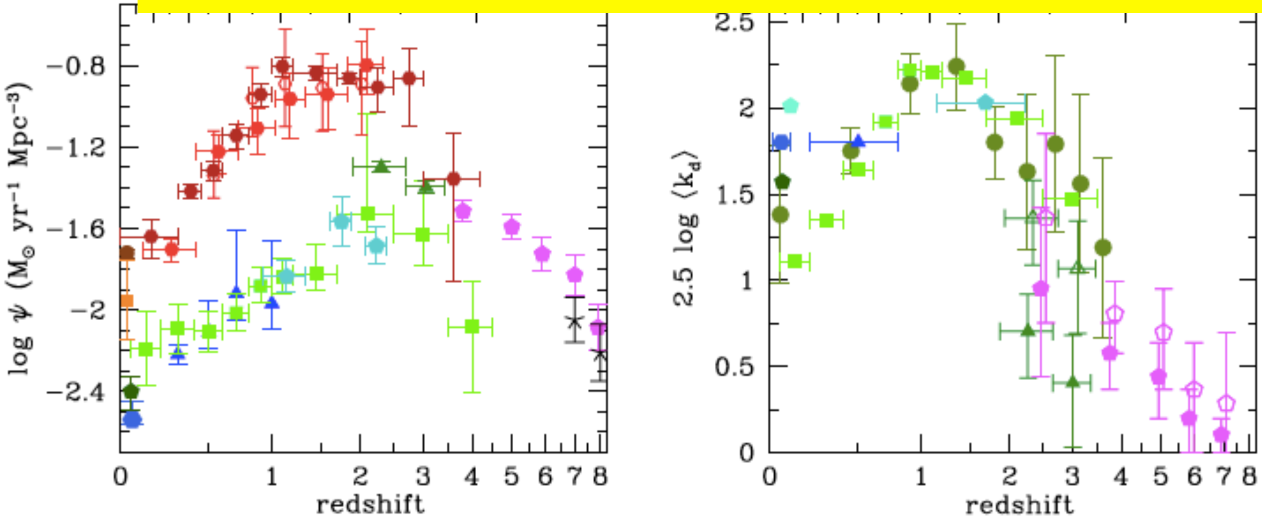




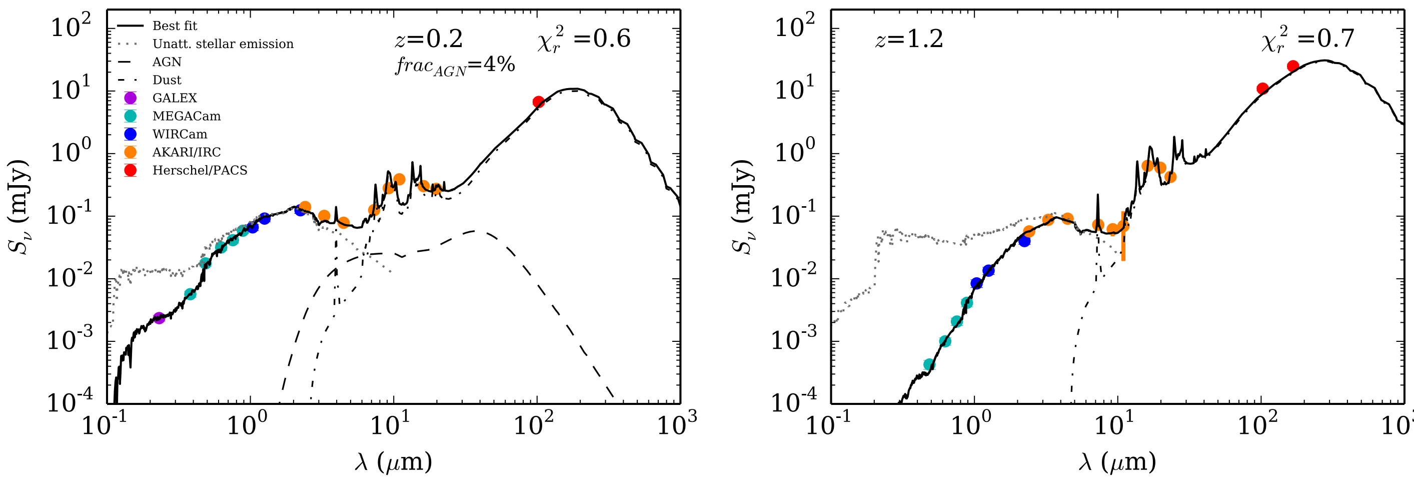
Star formation and dust attenuation in galaxies

V. Buat

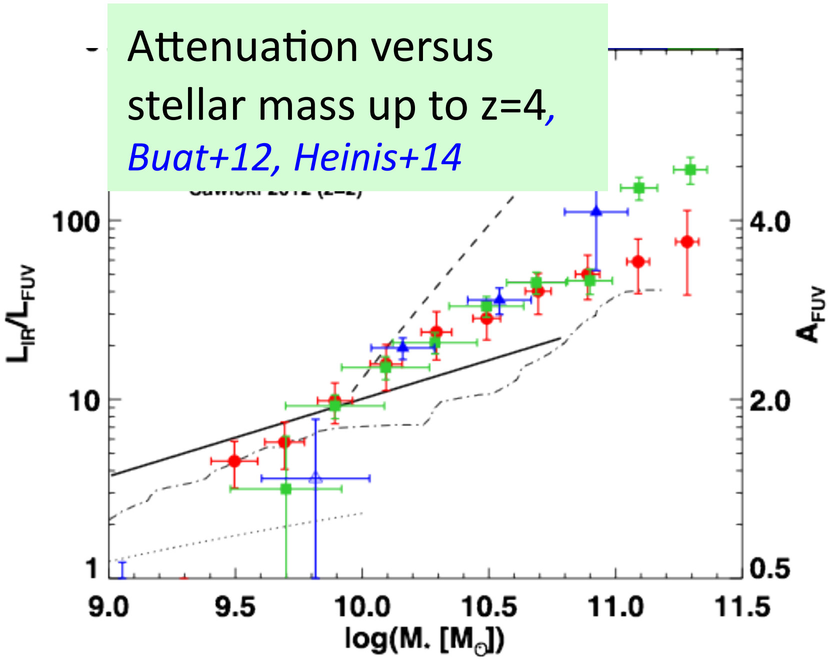
SFR and dust attenuation evolve with z

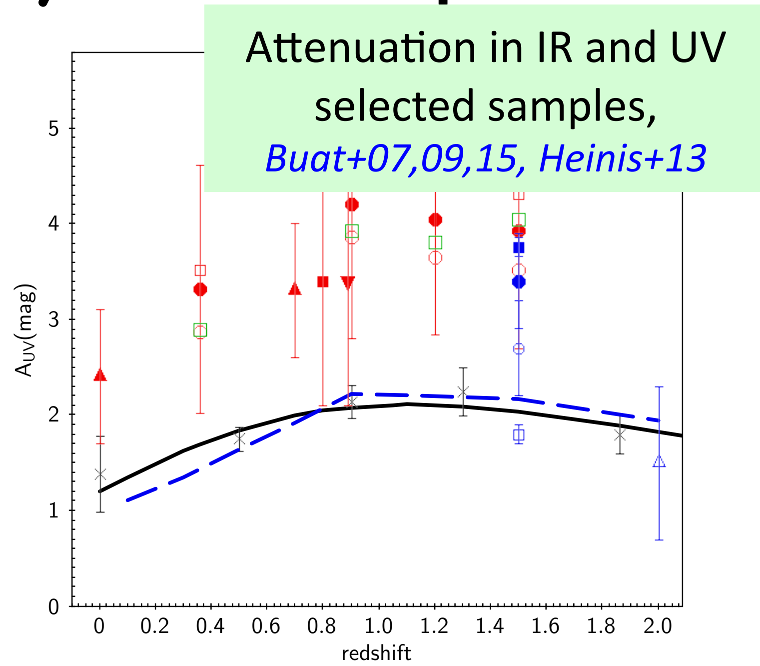


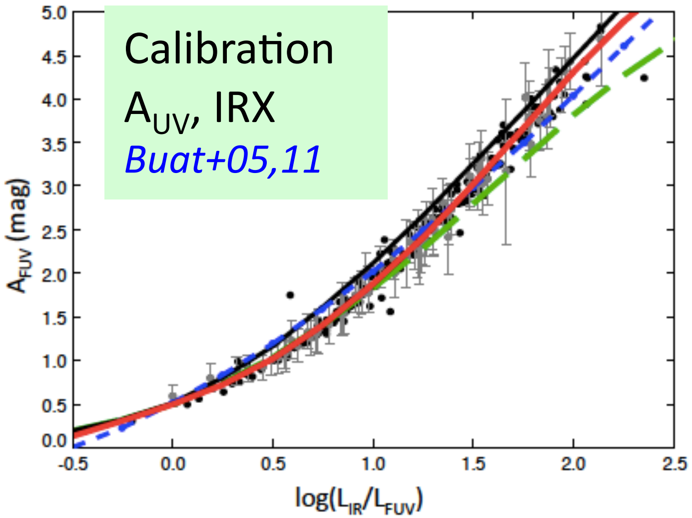
UV to FIR data and physically-based SED fitting: CIGALE code

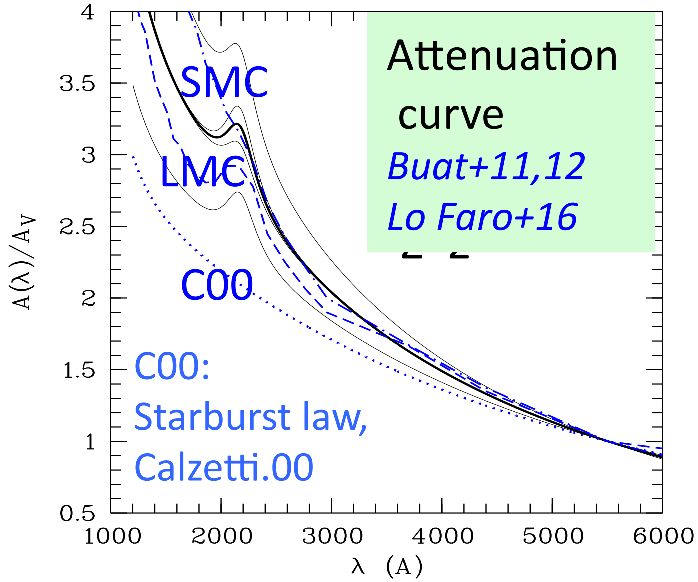


Attenuation in galaxies: physics and recipes









Cesar Caretta

Morgane COUSIN

www.morganecousin.wordpress.com

CNES post-doc 2014- 2016

Galaxy formation and evolution in the semi-analytical framework

In collaboration with :
Véronique Buat, Samuel Boissier, Guilaine Lagache

GECO day, 28 Juin 2016

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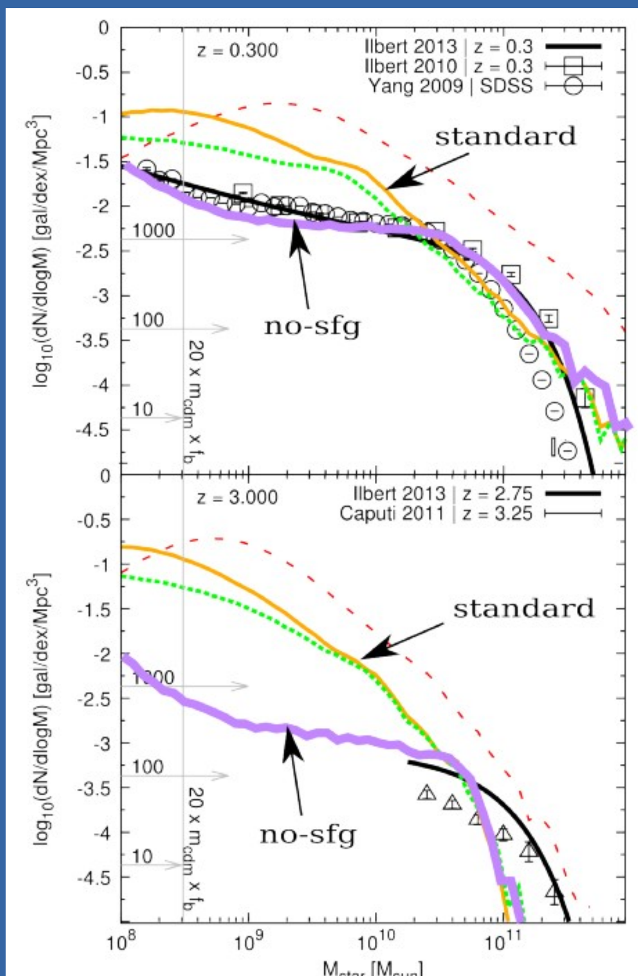
cnrs
dépasser les frontières

LAM
LABORATOIRE D'ASTROPHYSIQUE DE MARSEILLE

Diagnostic of the galaxy assembly: eGalICS



Towards a new modelling of gas flows in a semi-analytical model of galaxy formation and evolution★

M. Cousin[1], G. Lagache[1,5], M. Bethermin[4], and B. Guiderdoni[2,3]

Galaxy stellar mass assembly: the difficulty matching observations and semi-analytical predictions★

M. Cousin[1], G. Lagache[1,5], M. Bethermin[4], J. Blaizot[2,3], and B. Guiderdoni[2,3]

I have shown in Cousin+15a and Cousin+15b:

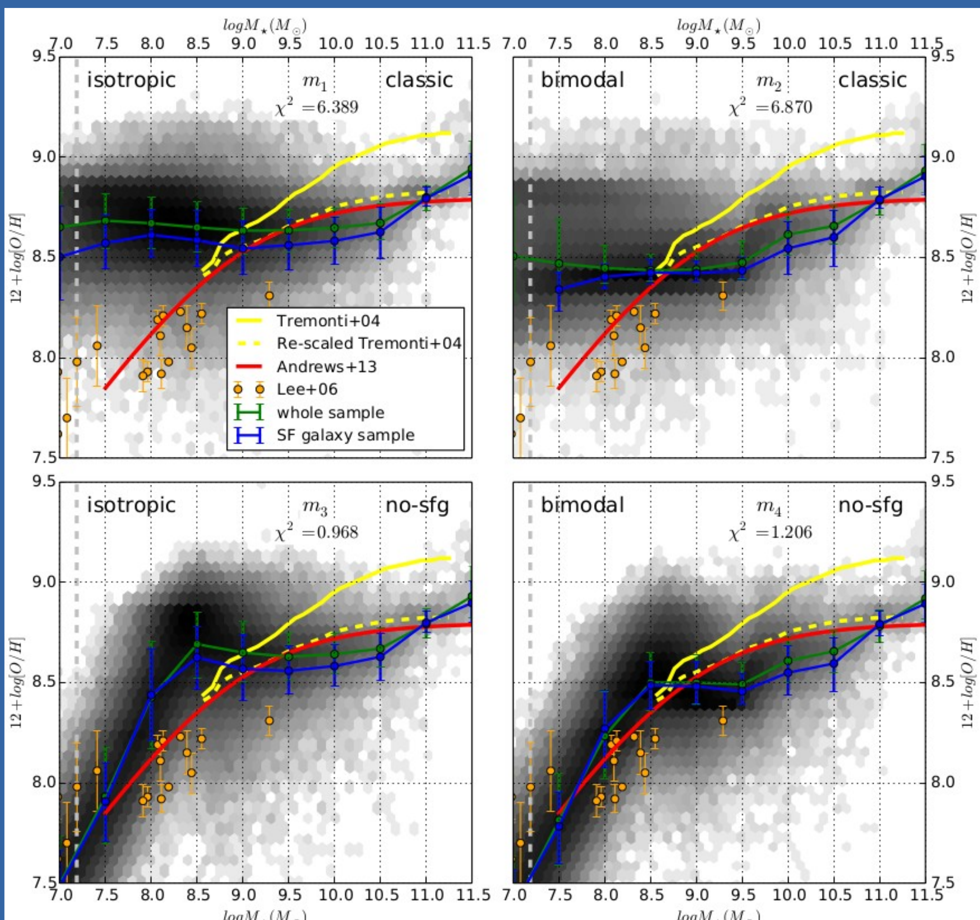
- Standard recipes of galaxy feedback can not reproduce, in a same time, SMF and SFRD

- Strong regulation of the SF have to be apply to reconcile observations and models

eGalICS, the galaxy explorer tool

Metal enrichment in a semi-analytical model, fundamental scaling relations, and the case of Milky Way galaxies★

M. Cousin[1], V. Buat[1], S. Boissier[1], M. Bethermin[2], Y. Roehlly[1], and M. Génois[3]



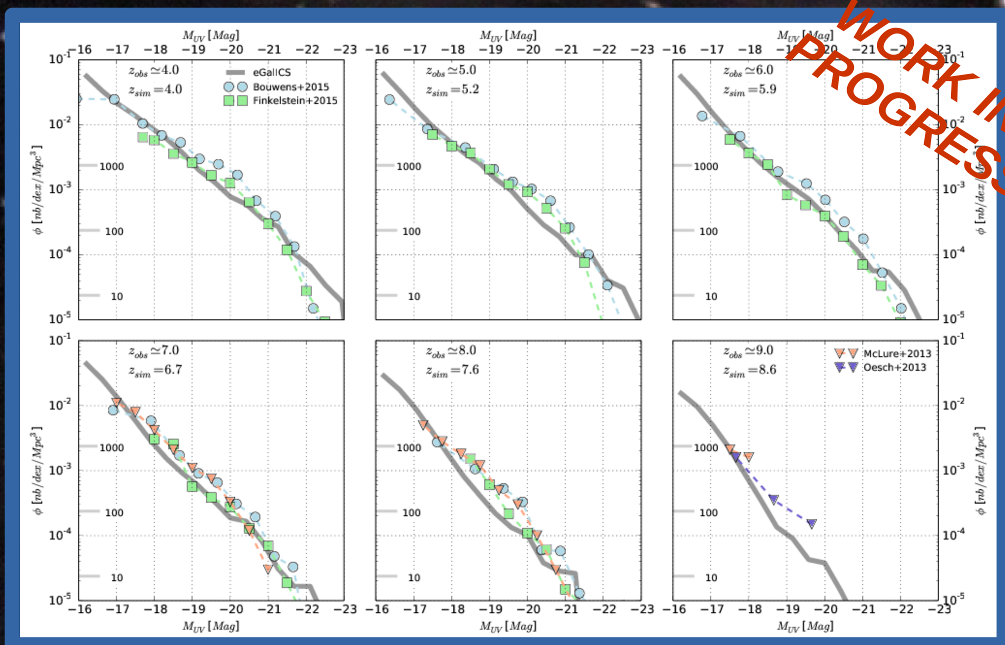
In Cousin+16
we explore metallicity signatures of galaxies
in different accretion and SF scenario

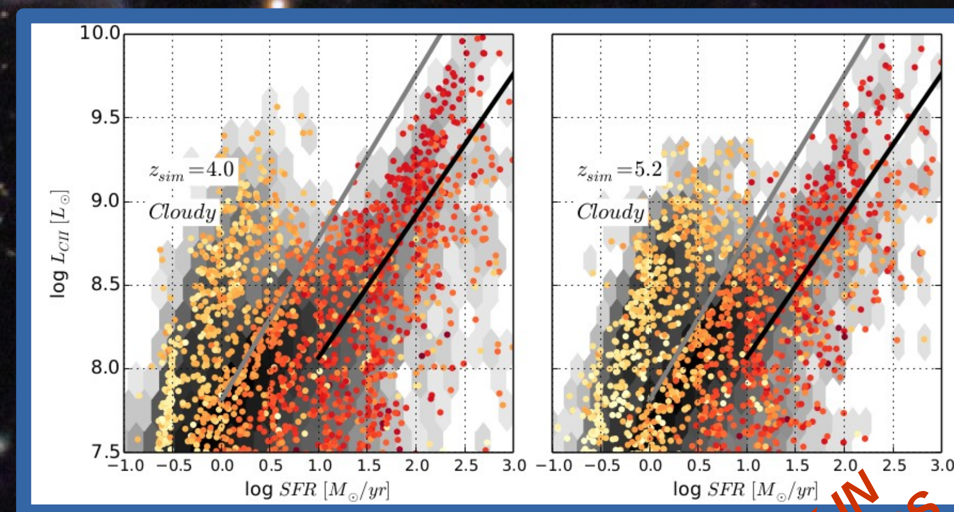
As for SMF, only a strong SF regulation process
can reproduce the fundamental scaling relation
in the low mass range

From physical processes to light

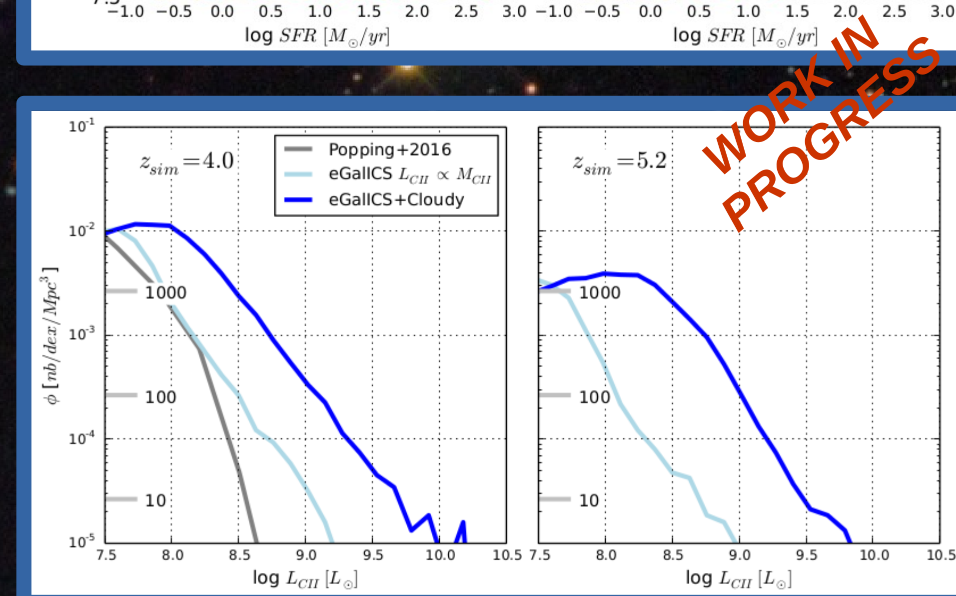
2 papers in prep :

- extinction and IR re-emission (eGalICS + dustem)





- CII in high-z galaxies
(eGalICS + Cloudy)



Cosmic acceleration & gravity

What is the origin of cosmic acceleration?

- Redshift-space distortions: a major cosmological probe
  - Test gravity on cosmological scales
  - Disentangle between Dark Energy/modified gravity models

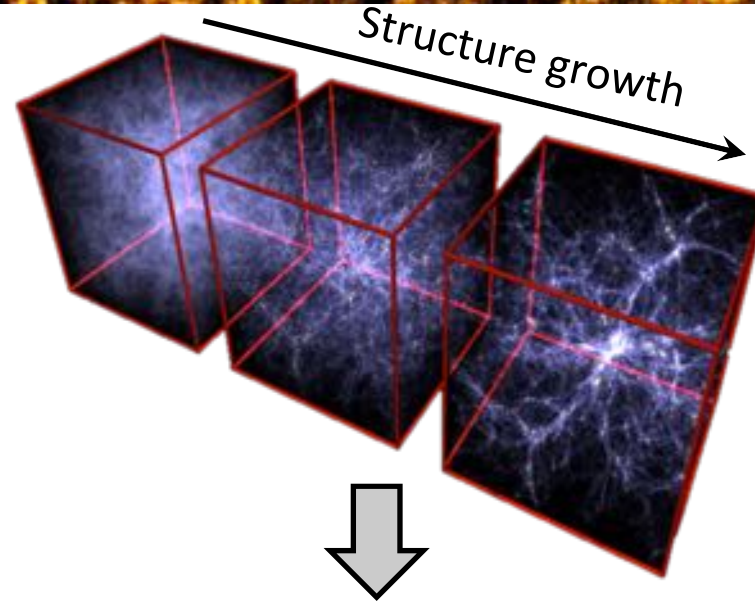
  de la Torre & Guzzo. 2012; de la Torre et al. 2013

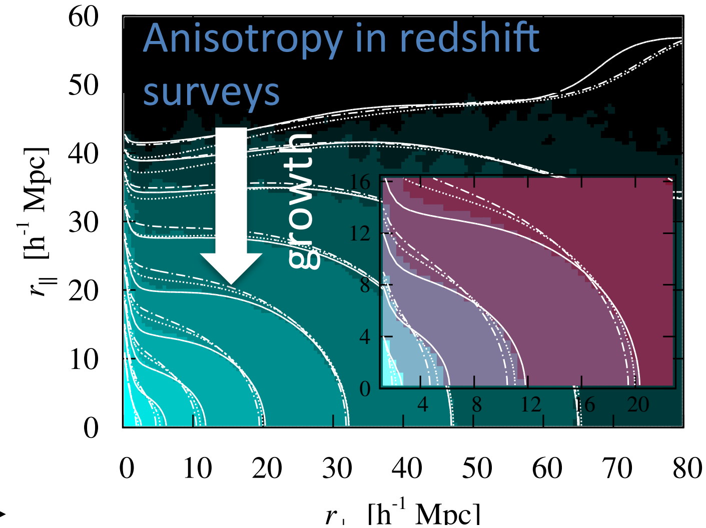
- Probe combination:
  - Allows reducing uncertainties (e.g. from bias with Weak Lensing)

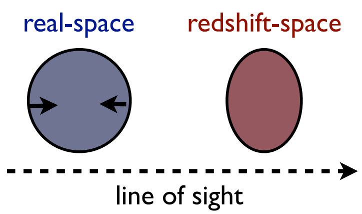
  de la Torre, Jullo et al. 2016 (in preparation)

  - Use of different matters tracers (galaxies, clusters, voids etc.)

  Mohammad, de la Torre et al. 2016







Cosmic acceleration & gravity

What is the origin of cosmic acceleration?

- Redshift-space c
  cosmological pr
  - Test gravity c
  - Disentangle b
    gravity mode

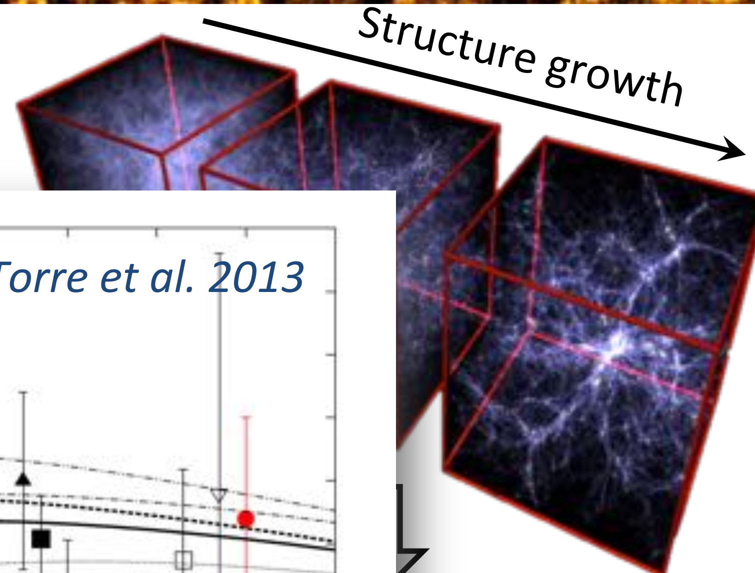
  de la Torre & Guzzo

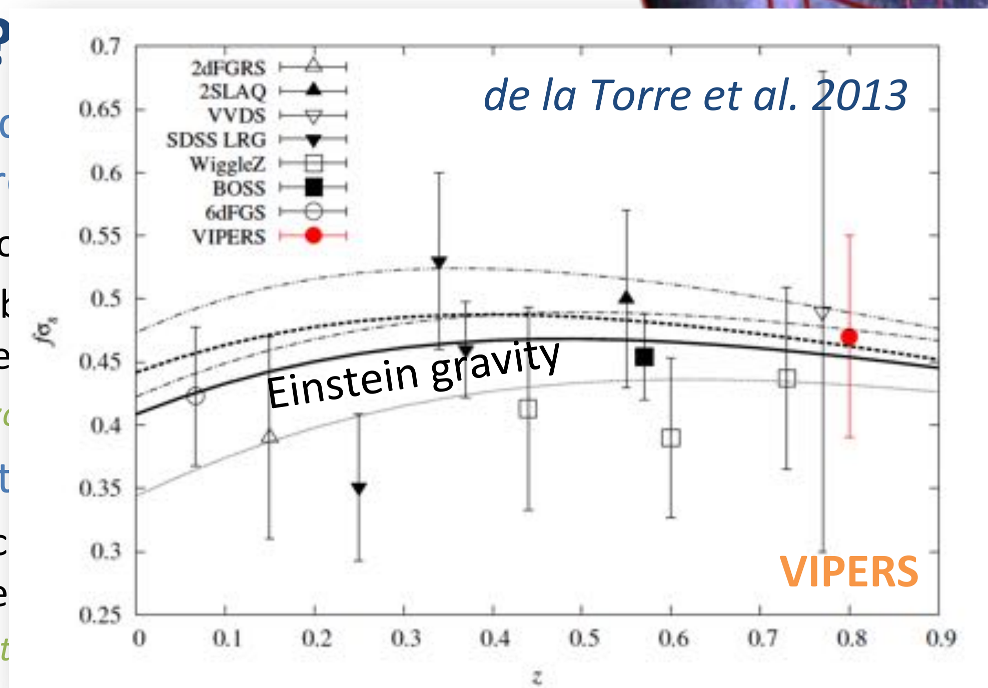
- Probe combinat
  - Allows reduc
    bias with We

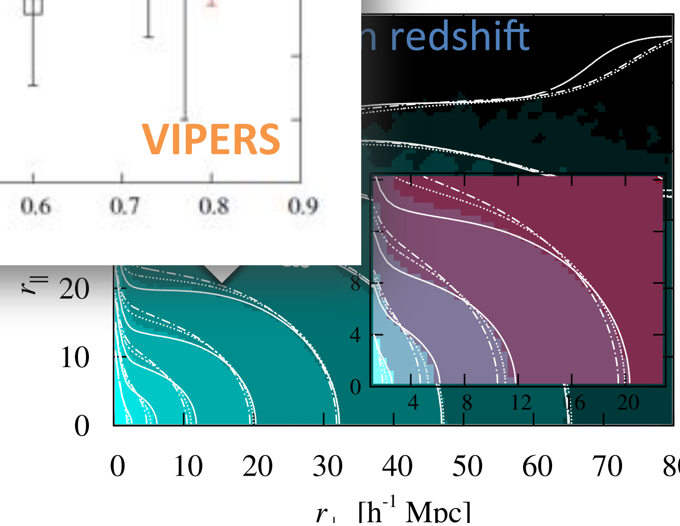
  de la Torre, Jullo et

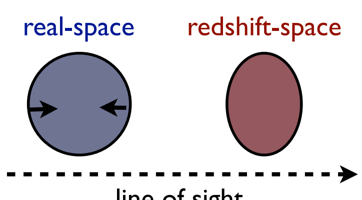
  - Use of different matters tracers (galaxies, clusters, voids etc.)

  Mohammad, de la Torre et al. 2016



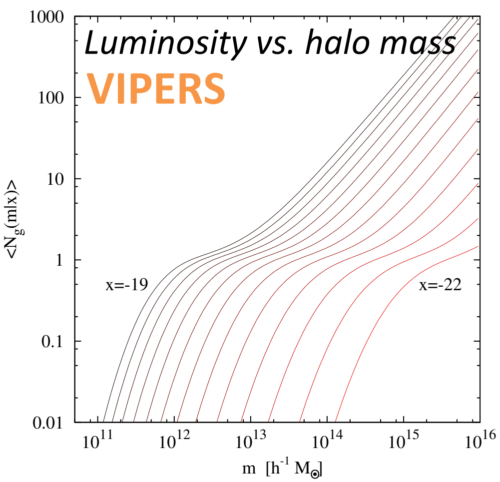




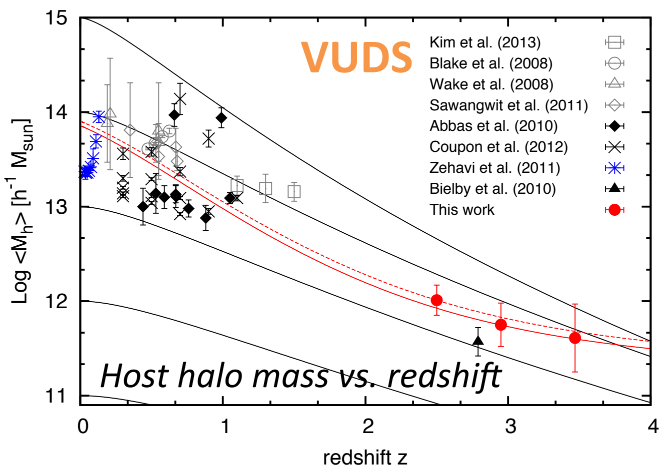


Link between galaxy formation and LSS

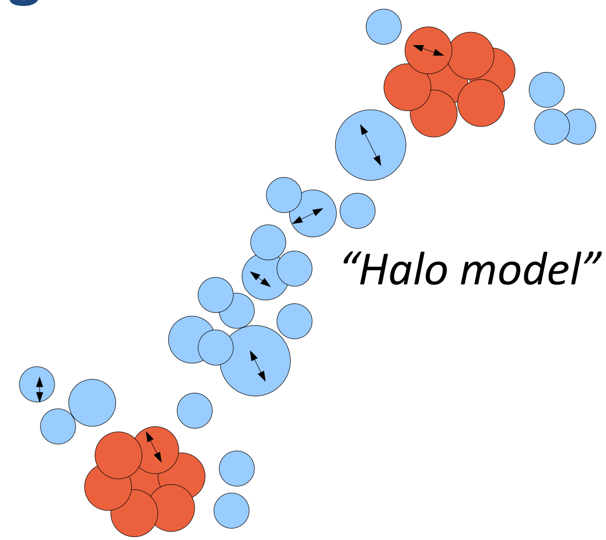
What is the link between DM haloes and galaxies?



de la Torre et al. 2013



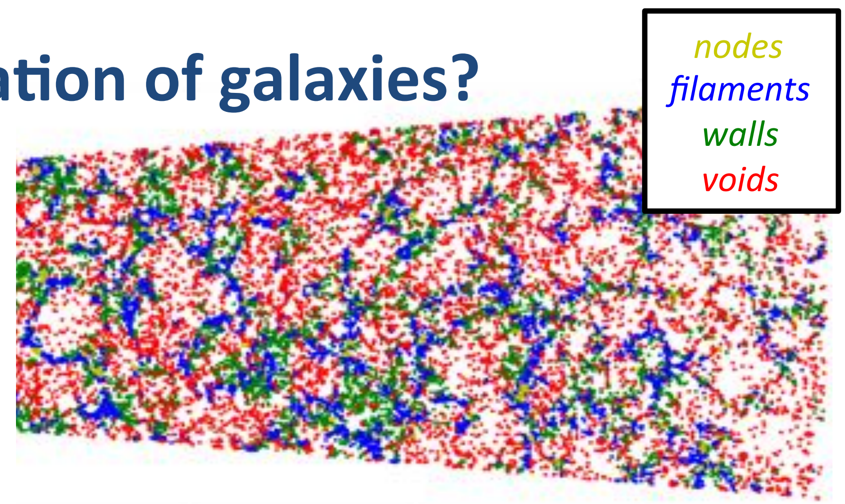
Durkalec et al. 2015

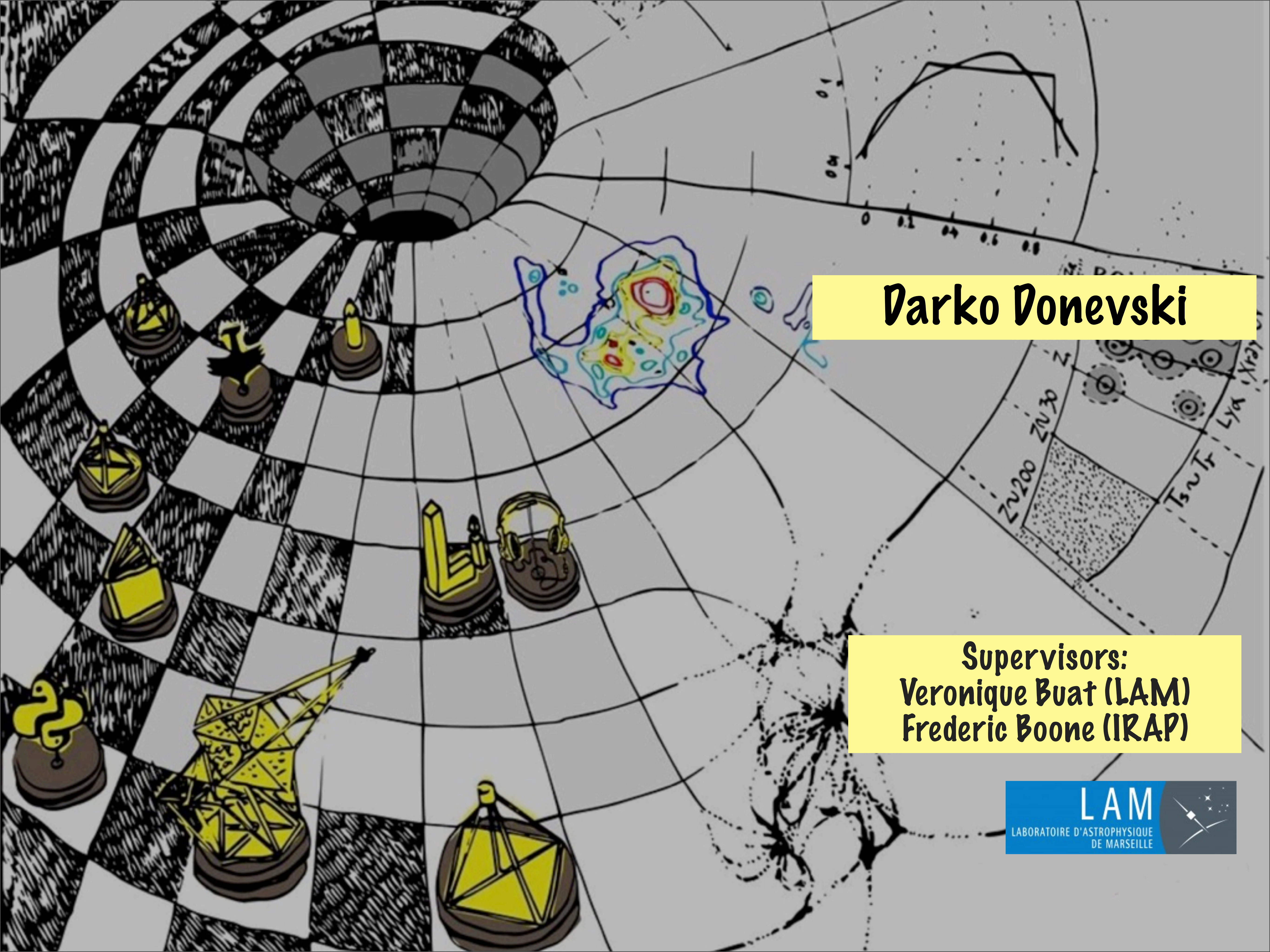


How the LSS influences the formation of galaxies?

- Use surveys such as VIPERS, GAMA to map the cosmic web
- Example of reconstruction of the large-scale environment in the VIPERS

Guinot, de la Torre et al., in prep.



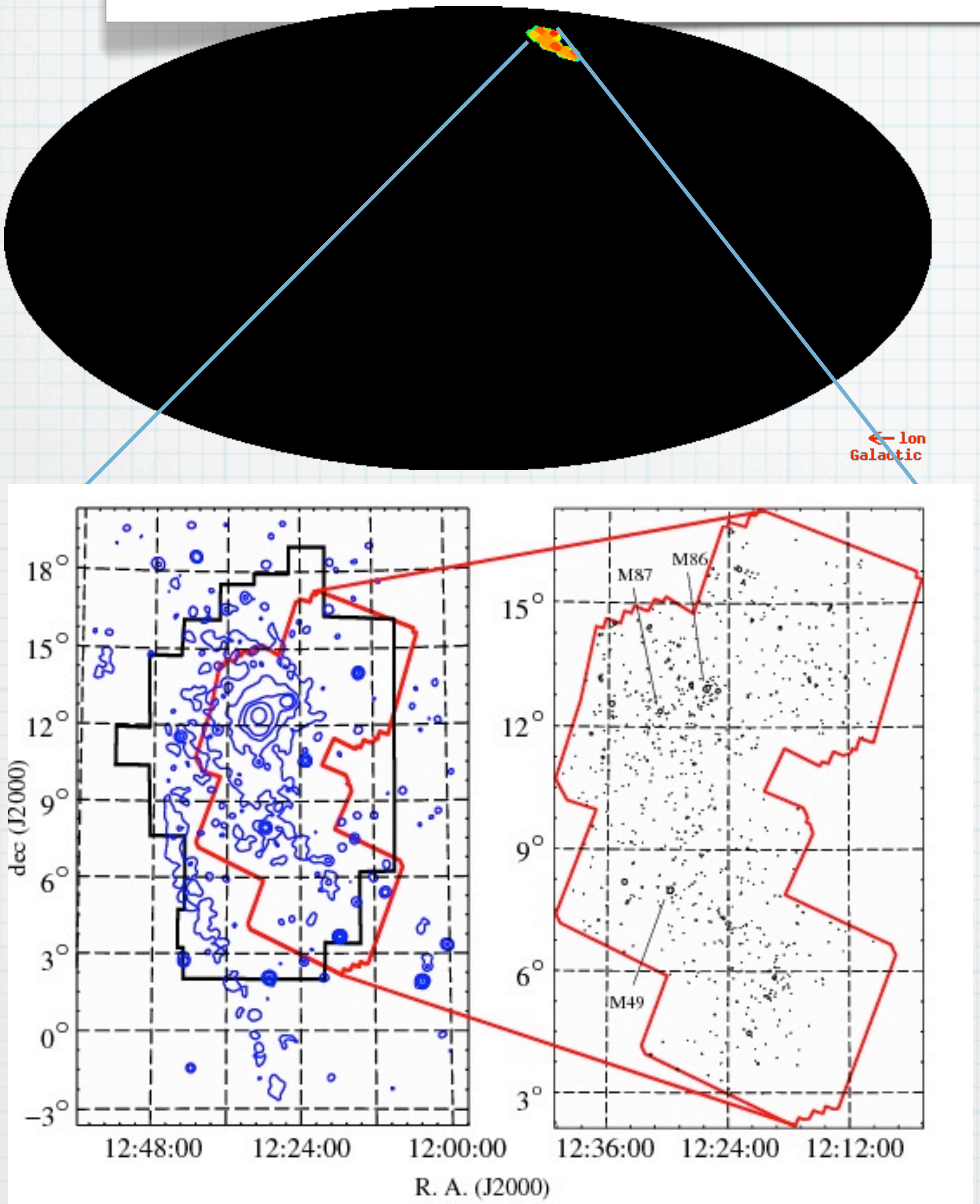


Darko Donevski

Supervisors:
Veronique Buat (LAM)
Frederic Boone (IRAP)

LAM
LABORATOIRE D'ASTROPHYSIQUE DE MARSEILLE

Research: High-z Galaxies in the Herchel Virgo Cluster Field (HeViCS)



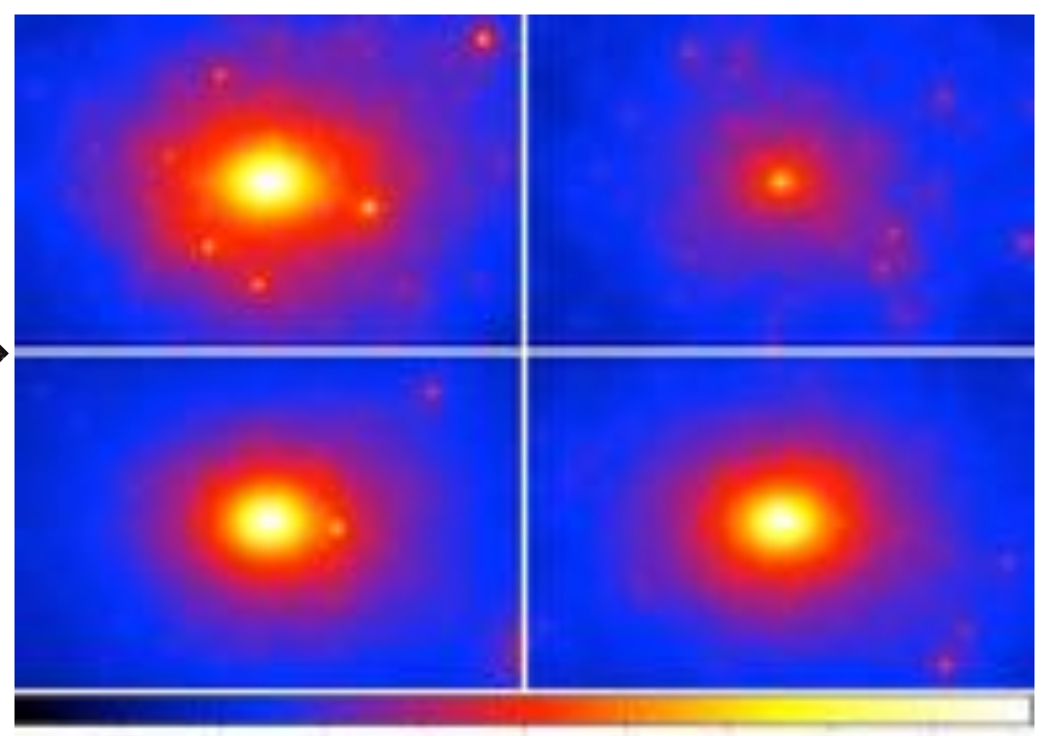
Sketches from my country

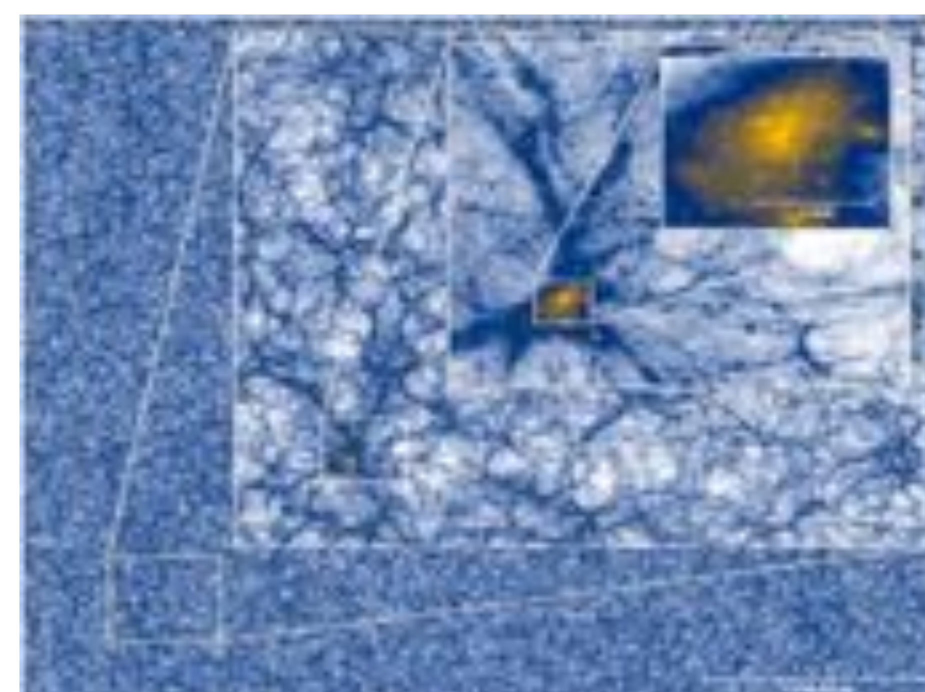
Petnica- International center for science education

Characterising Strong Lensing Galaxy Clusters using the Millennium-XXL and MOKA simulations

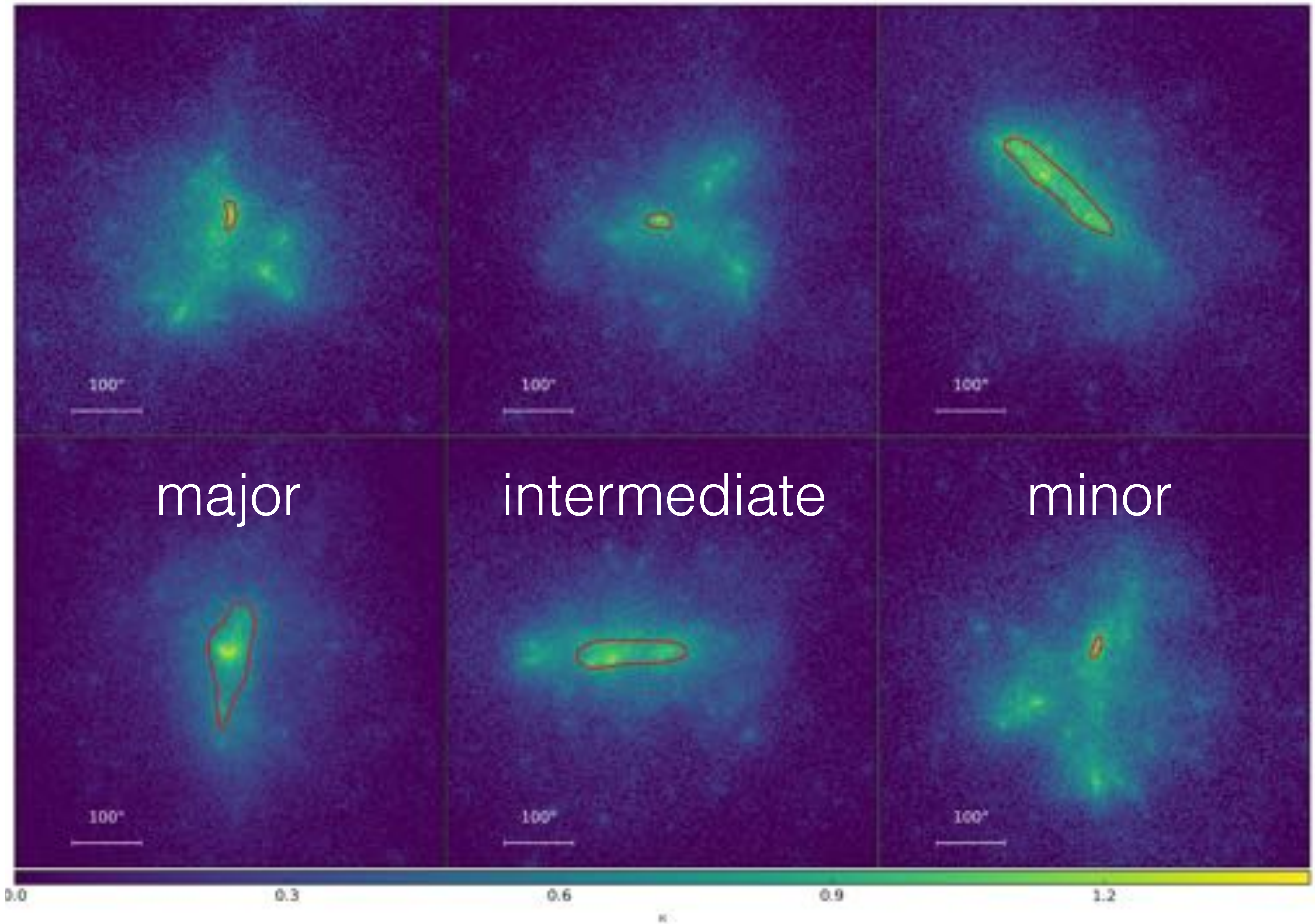
Giocoli, Carlo; Bonamigo, Mario; Limousin, Marceau; Meneghetti, Massimo; Moscardini, Lauro; Angulo, Raul E.; Despali, Giulia; Jullo, Eric

arXiv:1604.03109

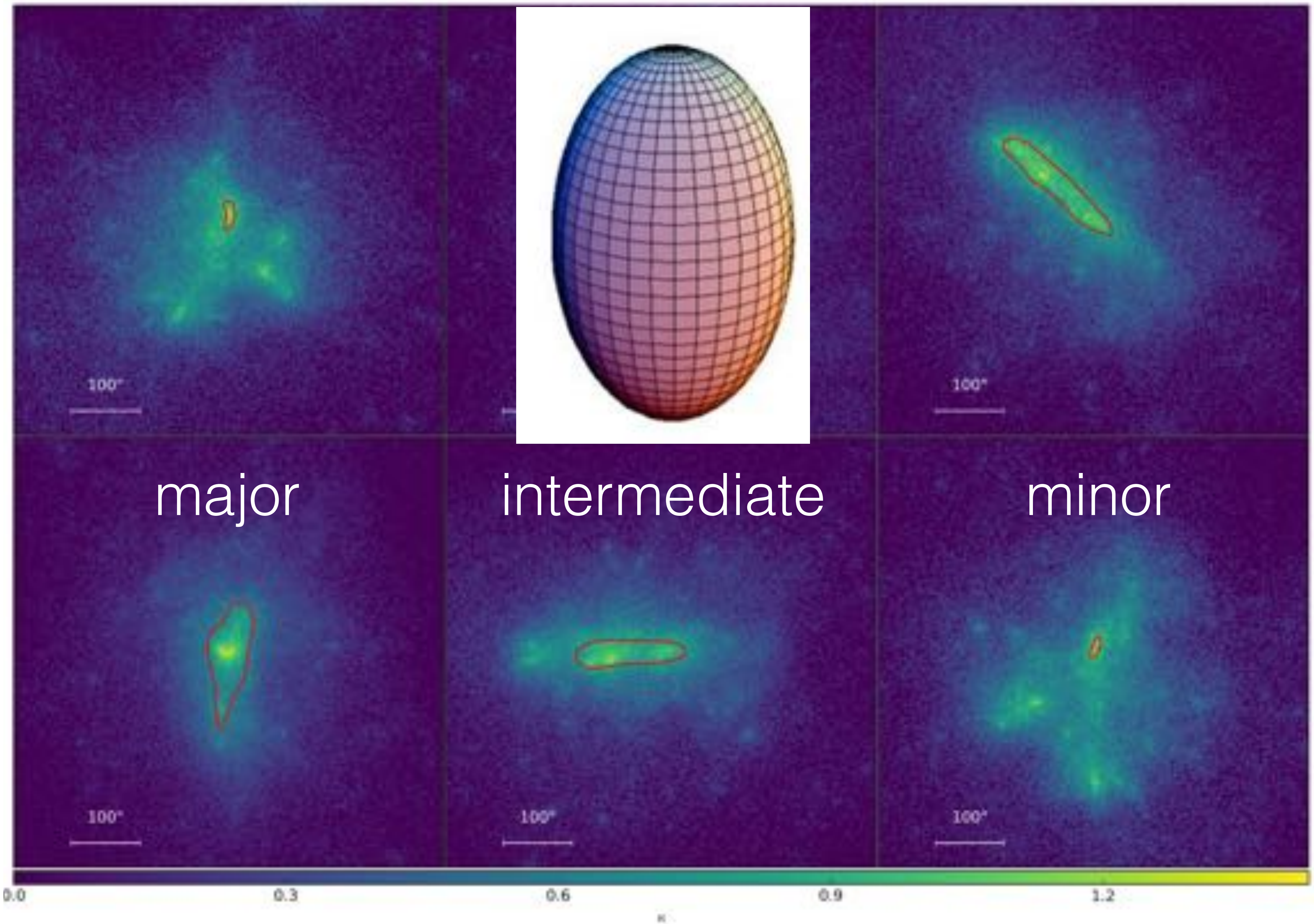




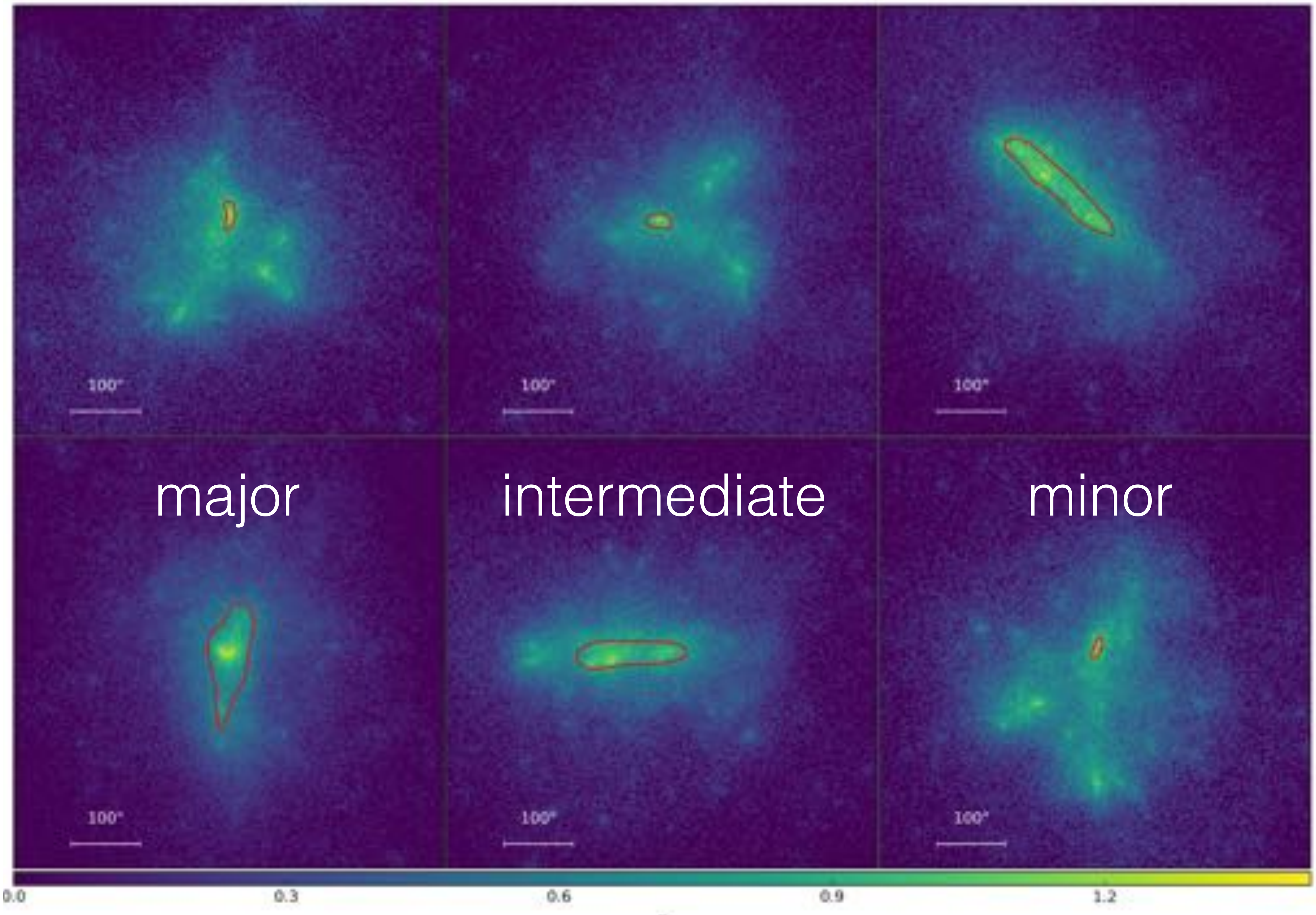
Millennium XXL Simulation

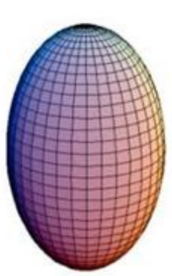


Millennium XXL Simulation



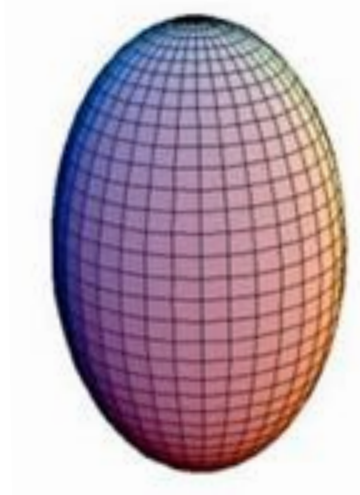
Millennium XXL Simulation

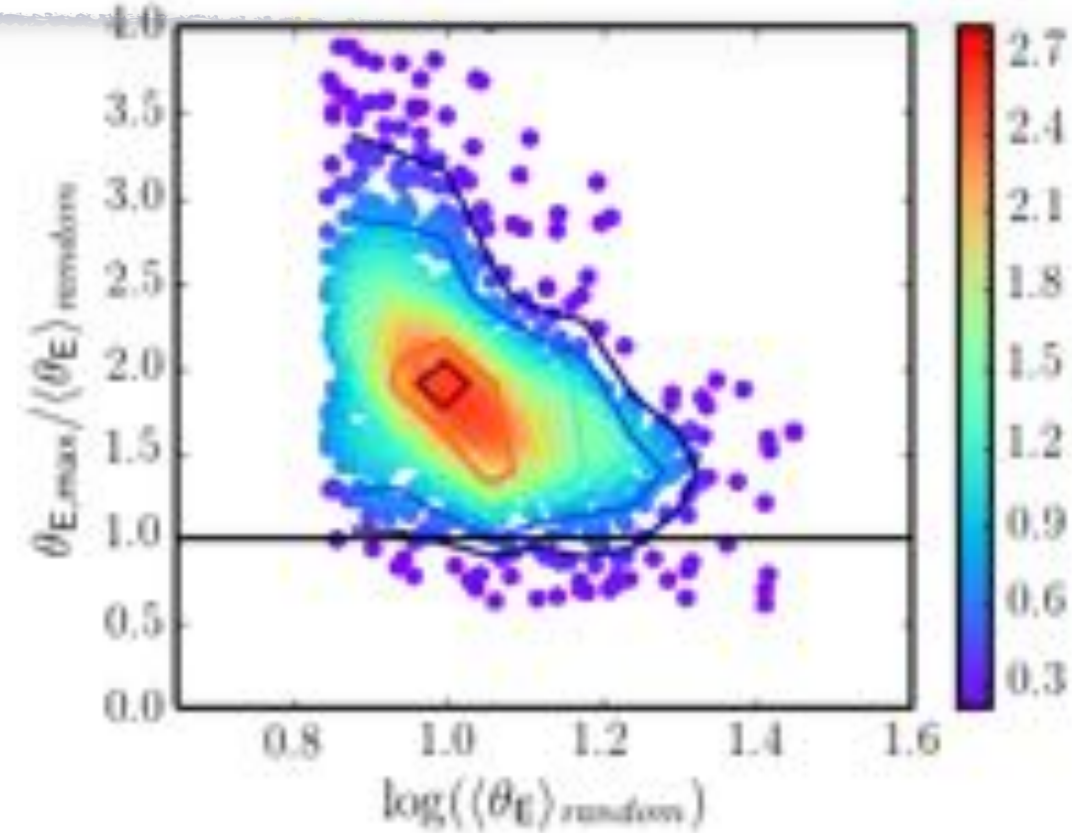




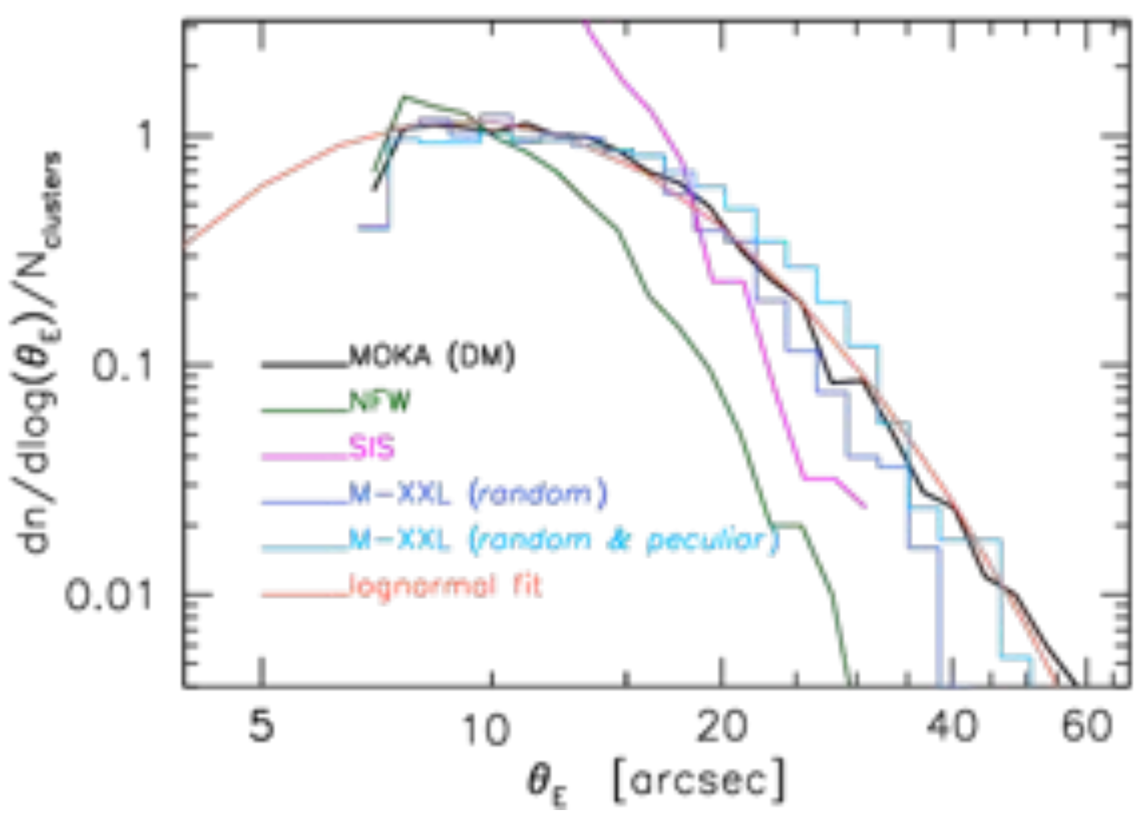
Millennium XXL Simulation

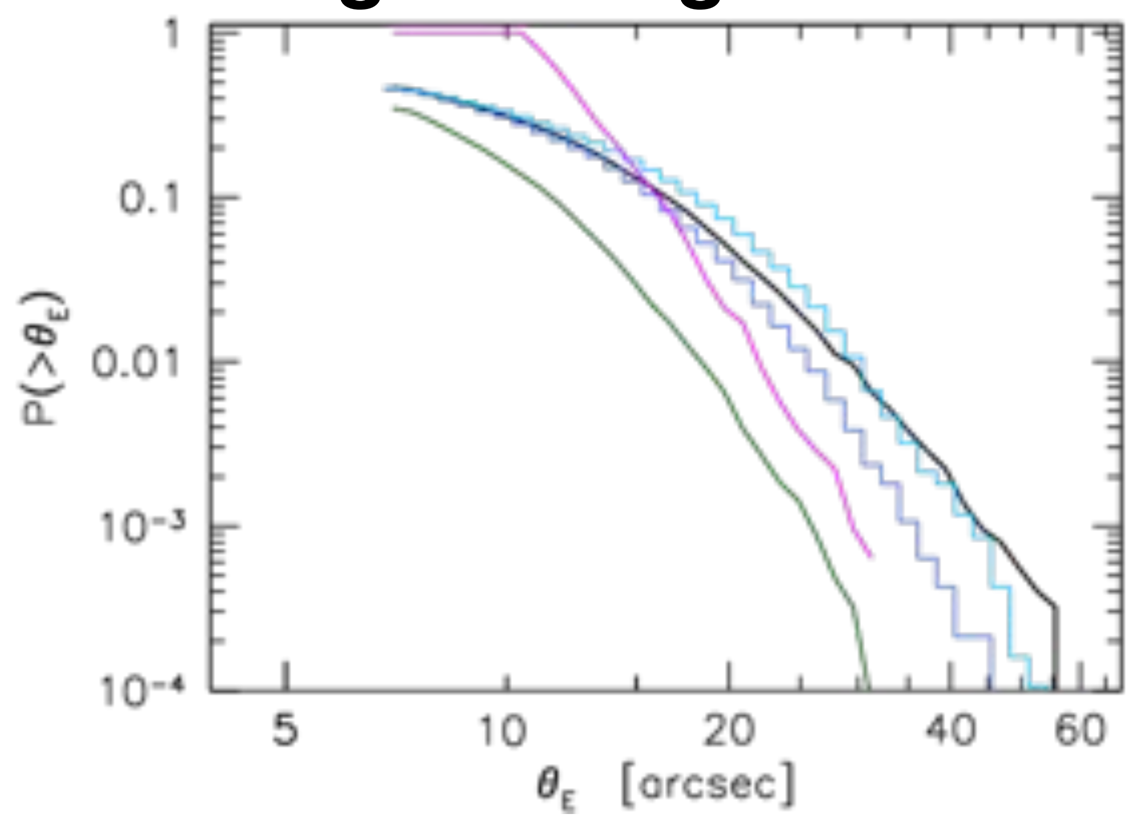
Orientation Bias



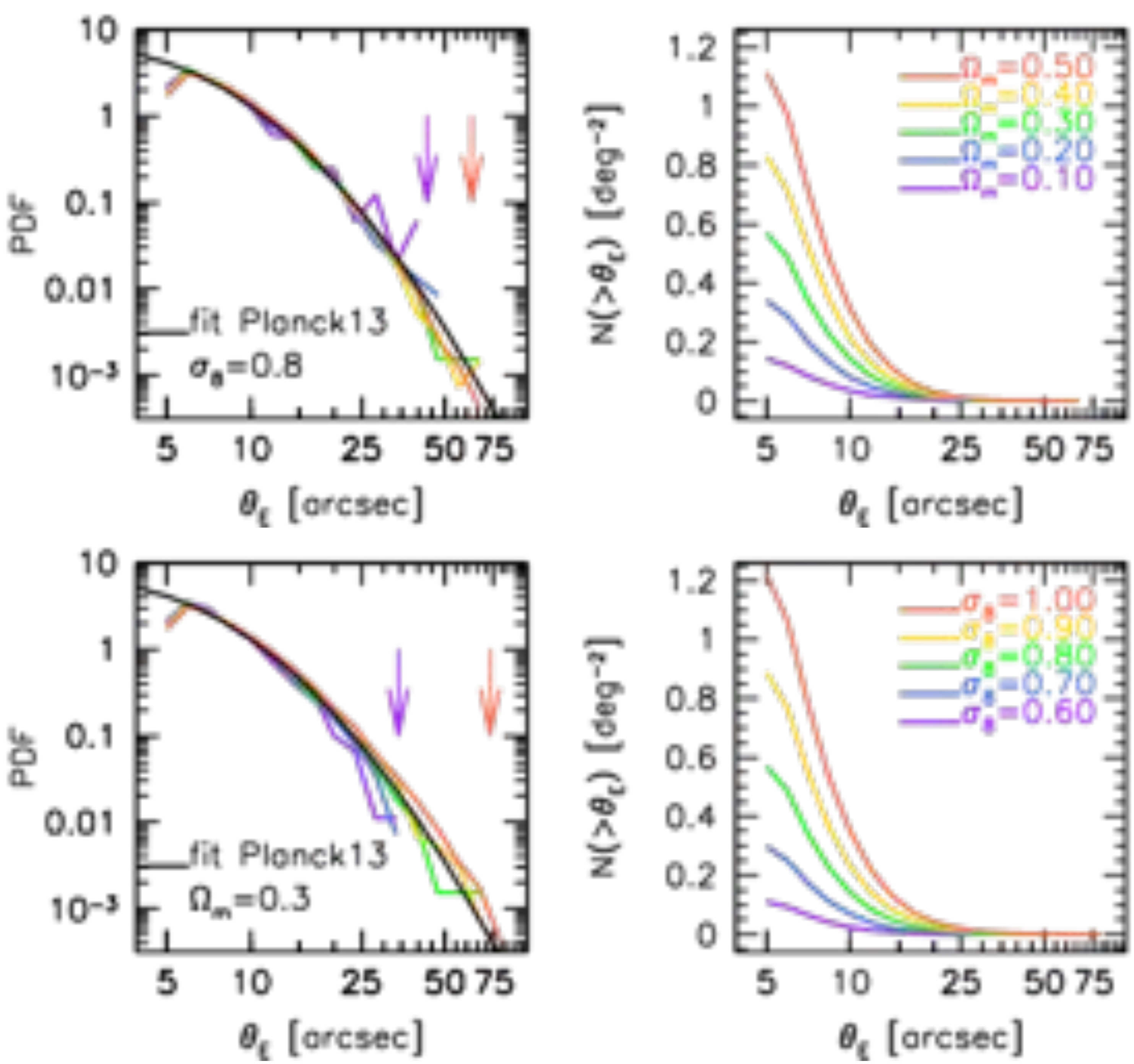


Einstein Radius Distribution of Strong Lensing Clusters





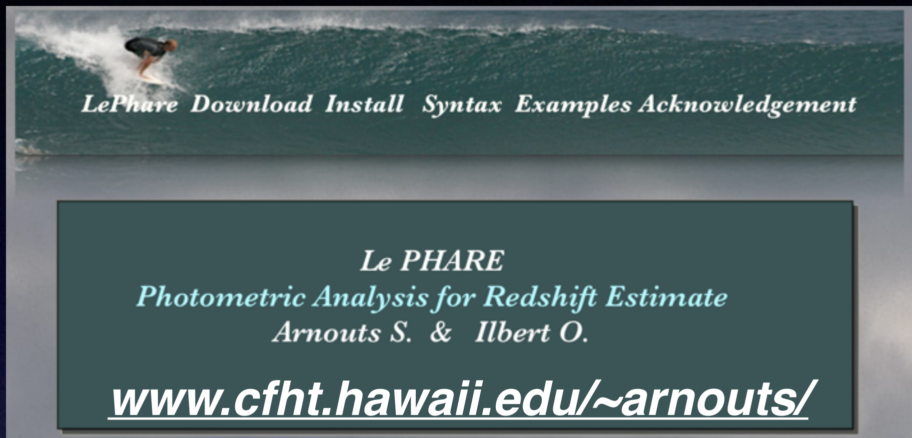
Dependence of the distribution of the Einstein radii on cosmological parameters



Left panels: probability distribution functions of the Einstein radius distributions of a Monte Carlo realisation of lenses at redshift $z_l = 0.5$ with sources located at $z_s = 2.5$ – the cluster number density has been computed from the Sheth & Tormen (1999) mass function integrated on the whole sky between $z = 0.48$ and $z = 0.52$. Right panels: cumulative number counts of strong lenses per square degrees with an Einstein radius larger than a fixed value. Top and bottom panels display the case of varying Ω_M and σ_8 at a time, respectively. The black curve in the left panels represents the log-normal relation (eq. 13) that better describes the Planck13 probability distribution function. The arrows on the left panels mark the largest Einstein radius find in the two extreme corresponding models..

Galaxy evolution from deep surveys

- Tools to compute photometric redshifts and physical parameters

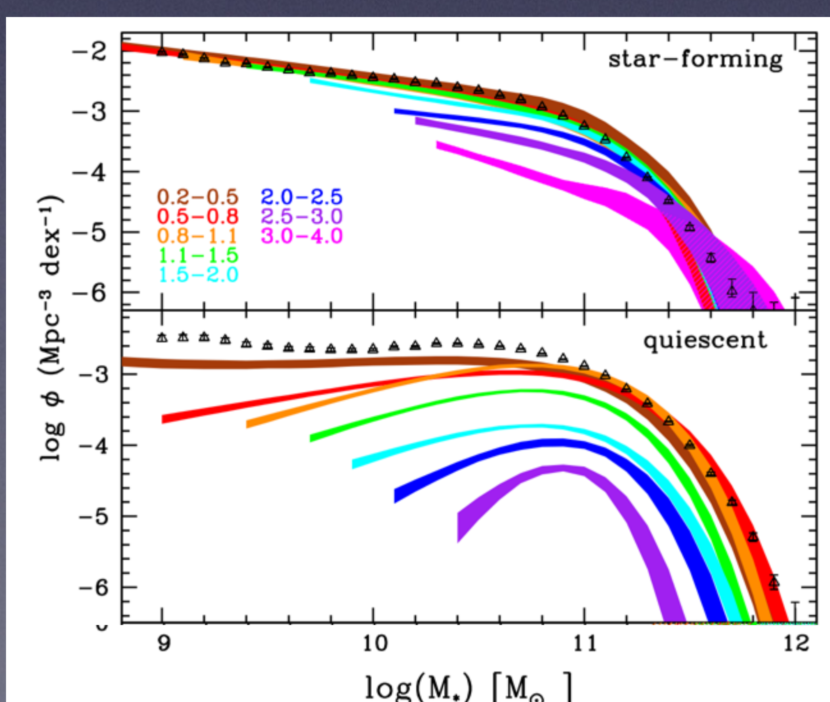


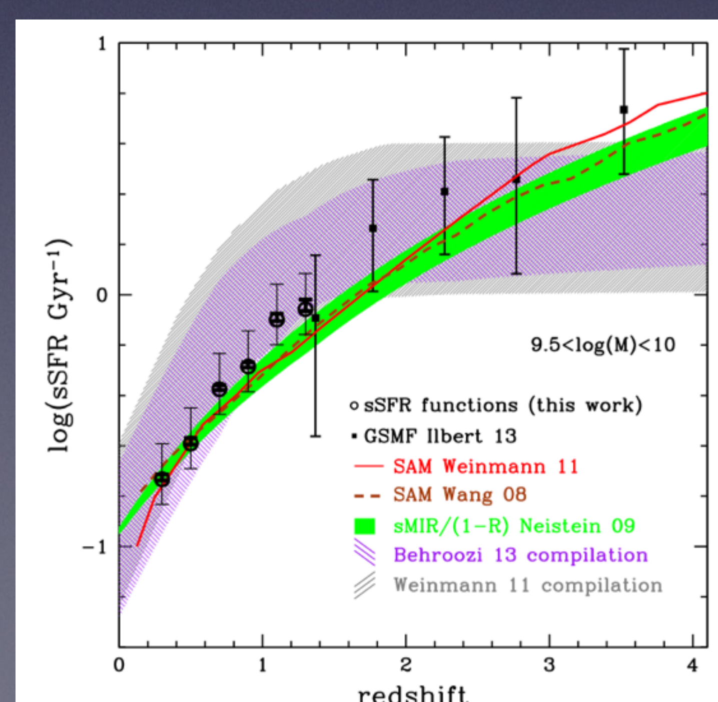
GA PAR
GAlaxy photometric redshifts (Z) and physical PARameters

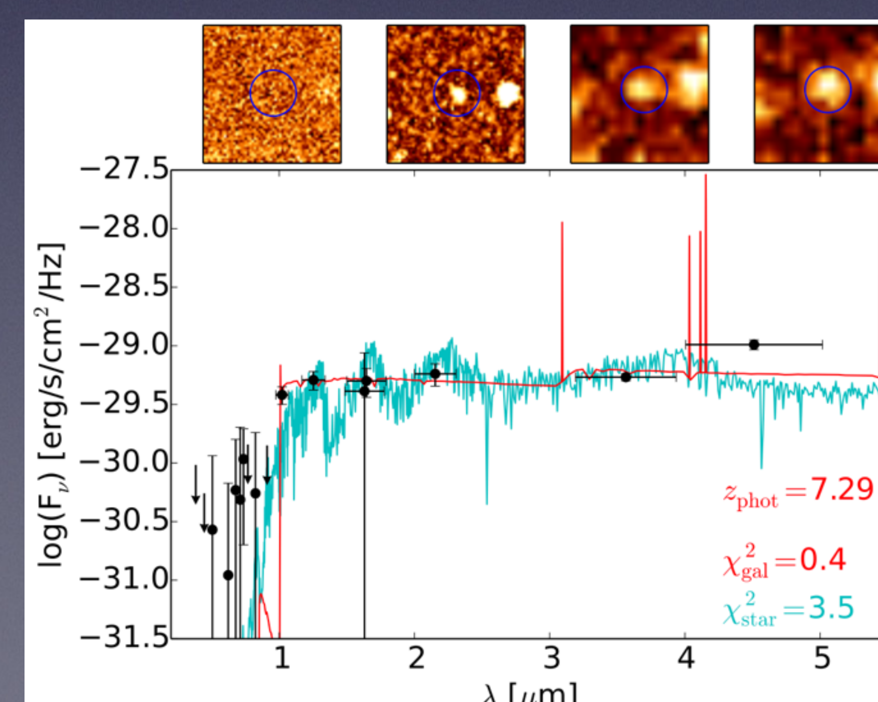
gazpar.lam.f

- Strongly involved in COSMOS

- Galaxy stellar mass assembly, sSFR evolution, SFH, quenching







Distribution of Baryonic and Dark matter in spiral and irregular galaxies

Marie KORSAGA

Supervisors : Philippe AMRAM, Claude CARIGNAN, Benoît EPINAT

Sample

- GHASP : Gassend HAlpha survey of SPirals

- A sample of 203 galaxies
- Using the 1.93m OHP telescope with Fabry-Perot interferometer with a rapid scanning and photon-counting camera(IPCS)
- Cover the entire population of the disk and emission line, the Halpha line at 656nm
- FOV of 6'*6' and high spectral resolution R~15000
- Determine the amount and distribution of dark and luminous matter in local galaxies by combining the kinematical data to the photometric data.

Mass model

To fit the rotation curve, different methods have been used :

- Cosmological numerical simulations (NFW) : $$\rho_{\mathrm{NFW}}(R) = \frac{\rho_i}{(R/R_s)(1+R/R_s)^2}$$

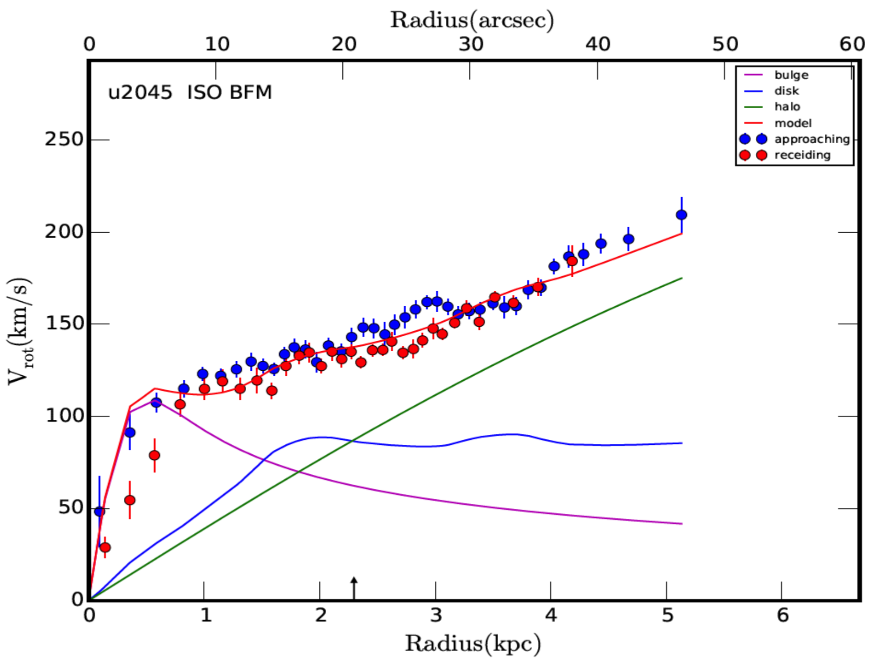
- Pseudo-isothermal sphere (ISO) : $$\rho_{\mathrm{ISO}}(R) = \rho_0\left[1+\left(\frac{R}{R_C}\right)^2\right]^{-1}$$

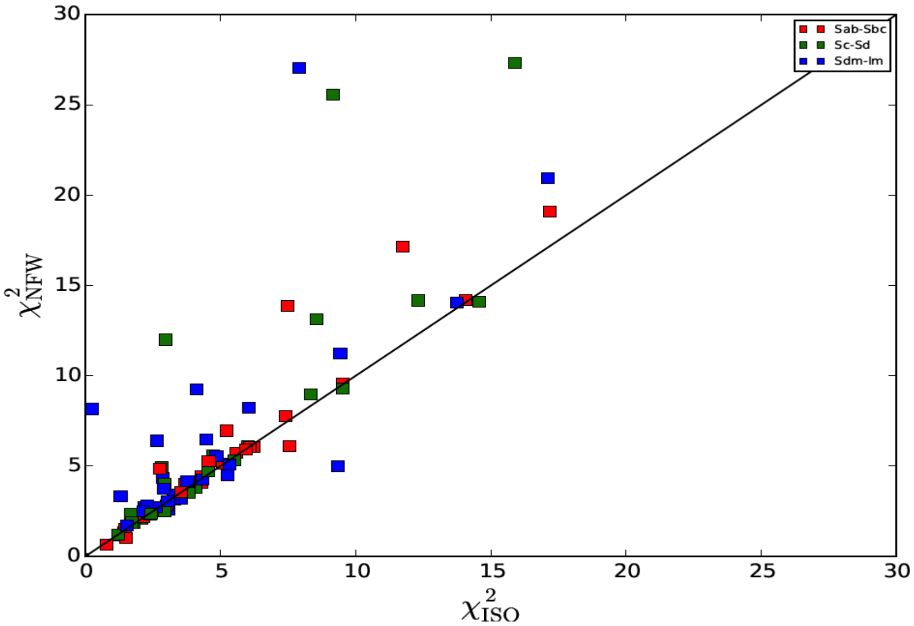
  - Best Fit Model (BFM) which allow to minimise the chi-square
  - Maximum Disk Fit (MDF) which allow to reduce the amount of the dark matter in the inner part of galaxies.
  - Correlation between the M/L and colors indices : $$^{10}\log(M/L_R) = -0.66 + 1.222(B-V)$$

- Theory of MOND (MOdified Newtonian Dynamics) : $$g_{\mathrm{mond}} = \frac{g_N}{\sqrt{2}}\left[1+\sqrt{1+4\left(\frac{a_0}{g_N}\right)^2}\,\right]^{1/2}$$

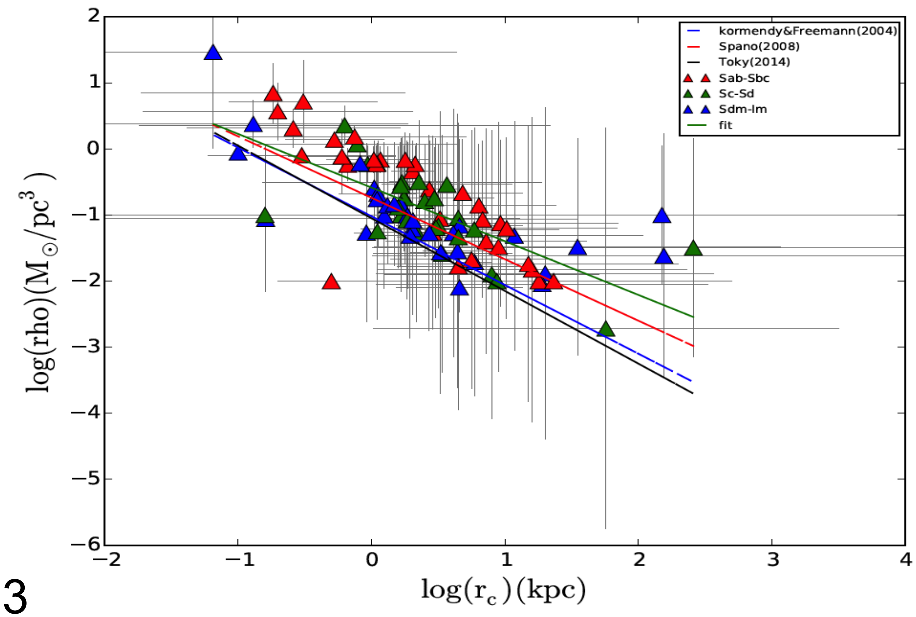
  - The MOND with acceleration threshold like a free parameter
  - The MOND with acceleration threshold like a constant

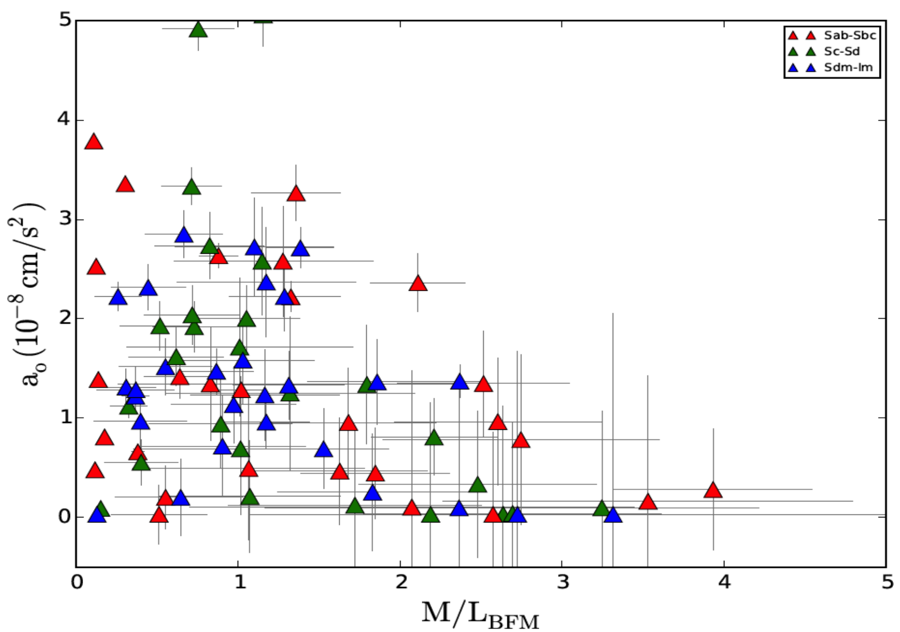
Results





ISO BFM and litterature

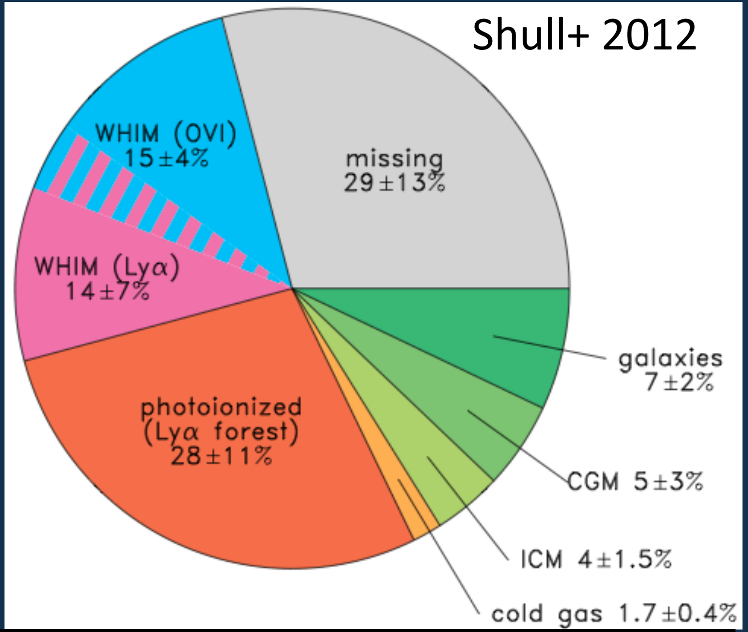


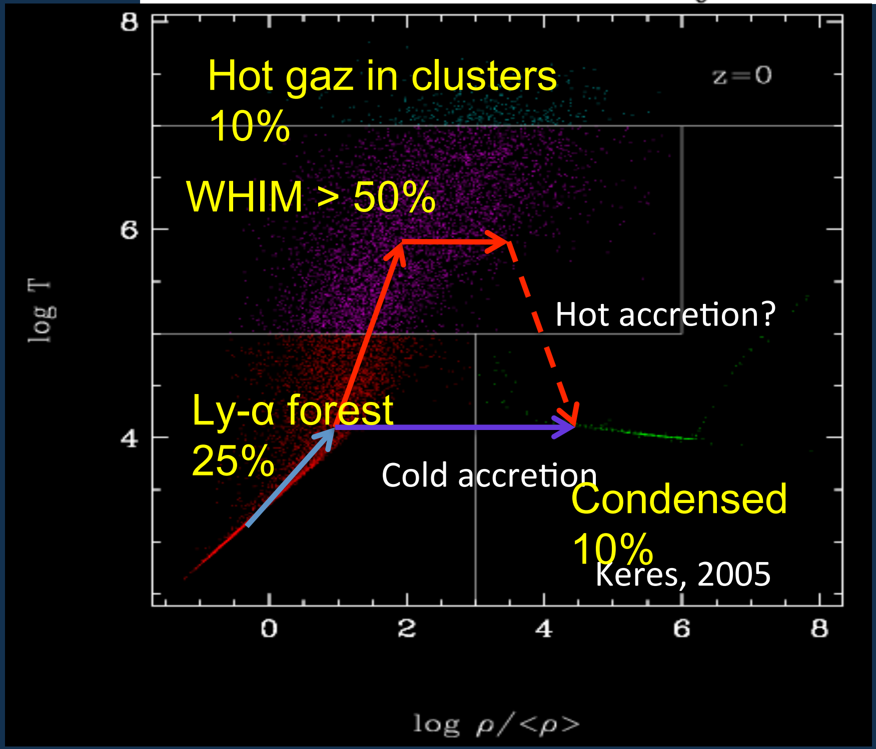


Bruno Milliard
Collaborators: C.Péroux, S.Quiret (PhD), D.Vibert, S.Arnouts, M.Treyer

Co-evolution of Galaxies, the IGM and the "baryon cycle"

Universe < 12 Gyears -> space UV



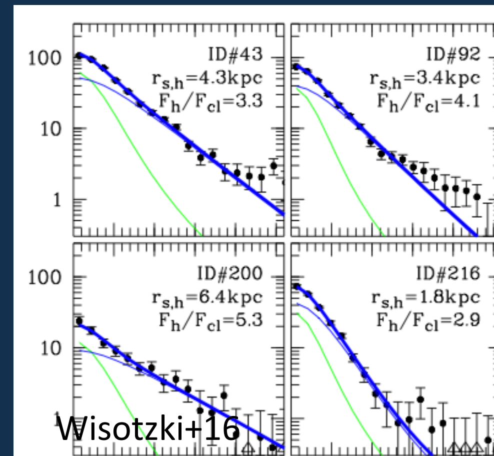


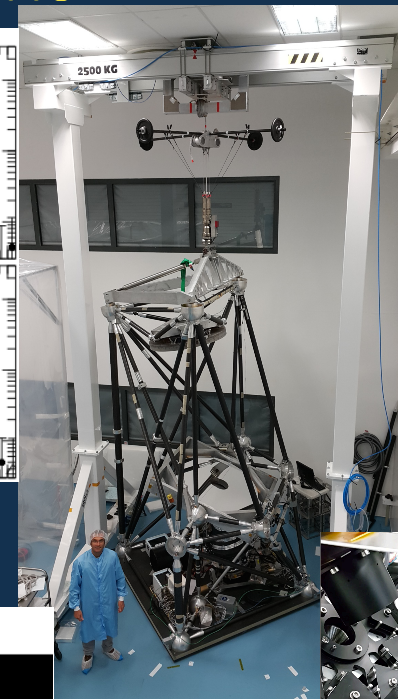
Observation of diffuse baryons z<2

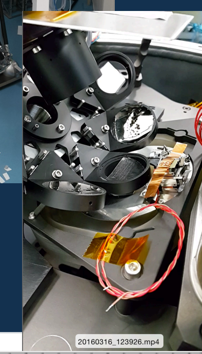
- Some galaxy disks work
  - Still (loosely) involved in galaxy evolution vs 3D LSS (Arnouts, Treyer)
  - Galaxy disks properties – absorption features at large radii (C.Péroux, S.Quiret)

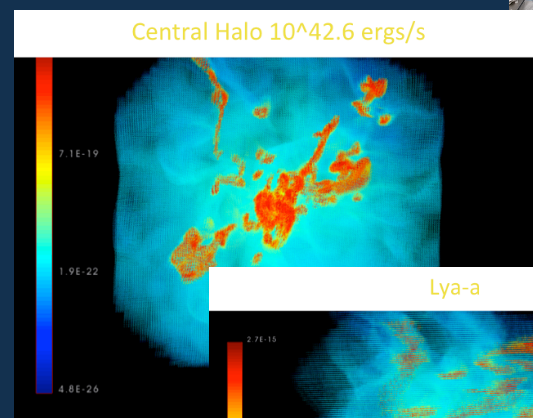
Focus on diffuse baryons

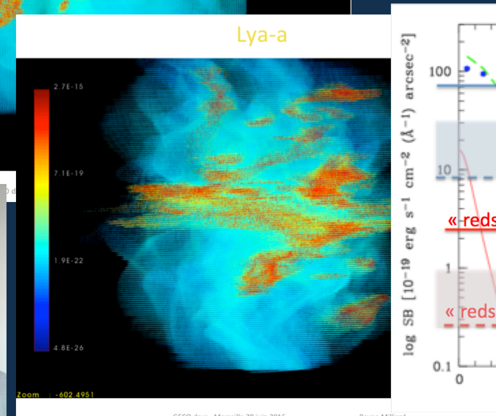
- Traditional approach: QSO spectroscopy in absorption
- New approach: emission
  - Quickly developping at z > 2
  - Very lmited at z < 2 -> Space
  - Startospheric pathfinder FIREBall
  - UV MOS bound to fly 2017
  - 150 targets R=2000, FWHM 4 ''
  - Simulations emission Ly-a HI, OVI 103nm, CIV 155nm (S.Quiret, D.Vibert)
- Long term: ISTOS/LAEX LUVOIR

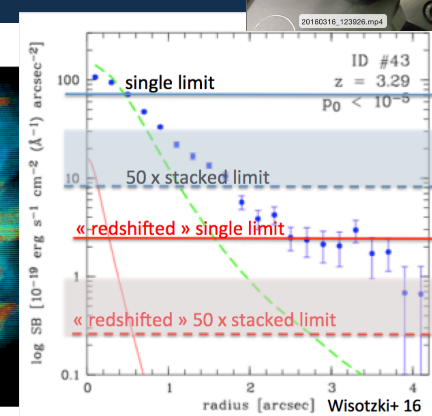












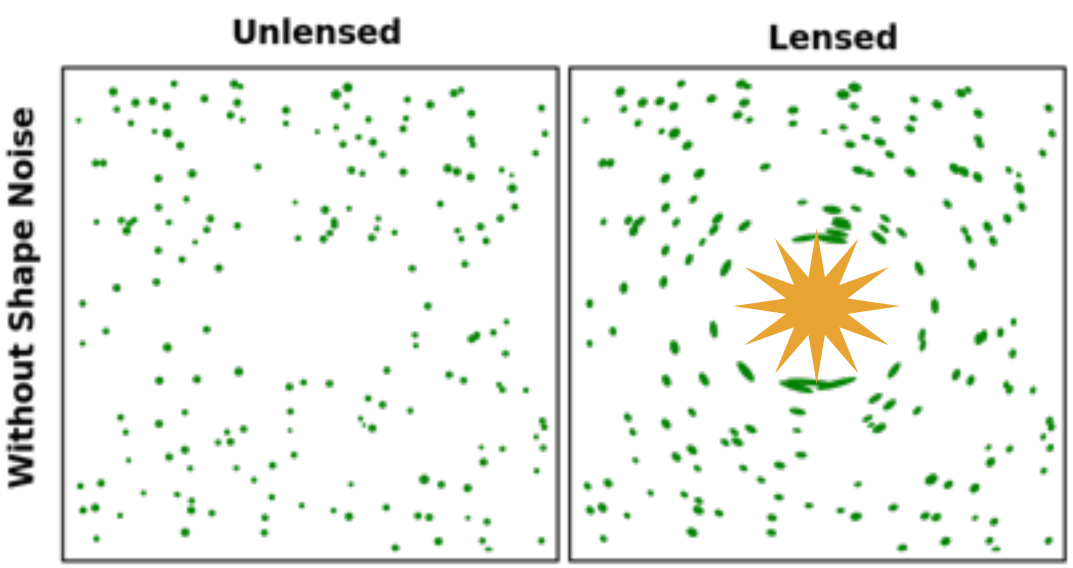
Anna NIEMIEC
PhD at LAM
Under the supervision of Eric Jullo & Marceau Limousin

Background :

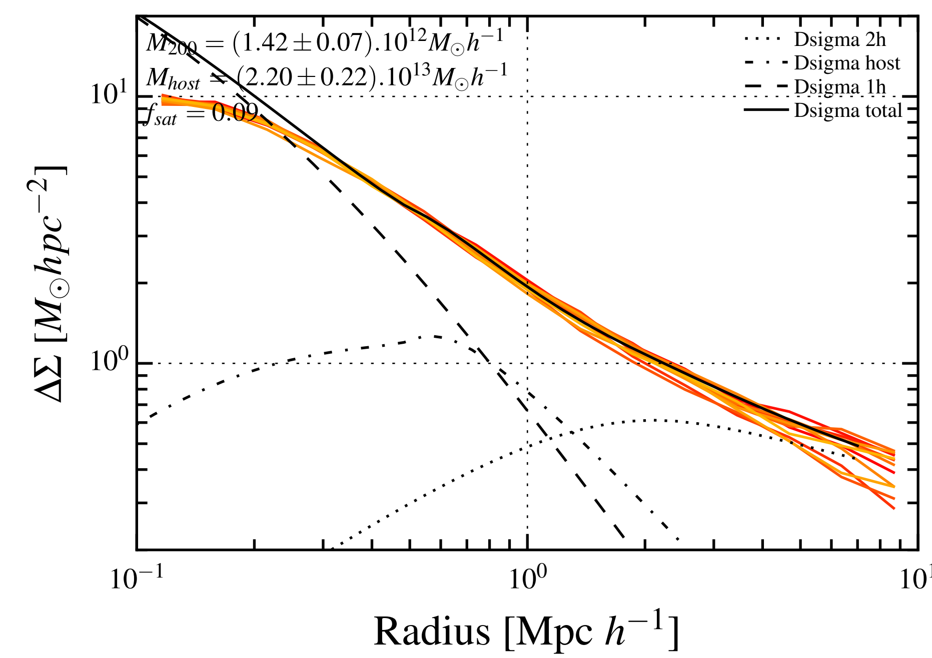
- 2010-2013: studies at ENS Cachan
- 2013-2014: internship at the Centro Bresileiro de Pesquisas Fisicas
- 2014-now: PhD at LAM

Probing dark matter haloes with galaxy-galaxy weak lensing

Distortion of background sources by gravitational potential of galaxy

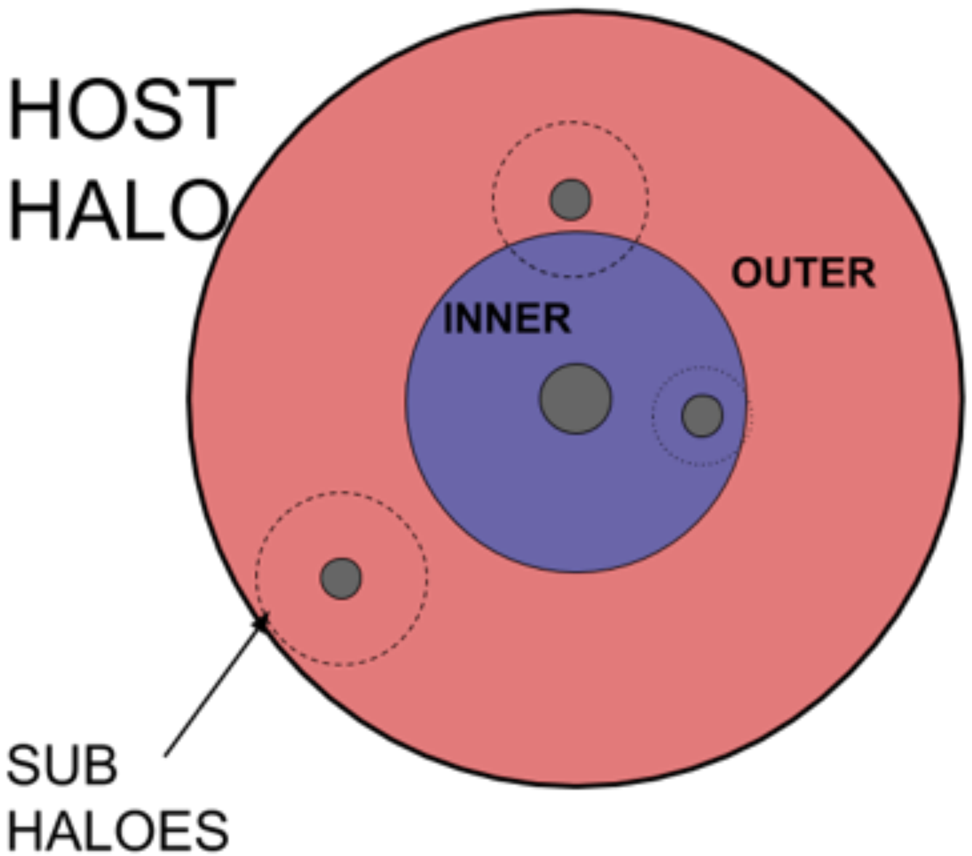


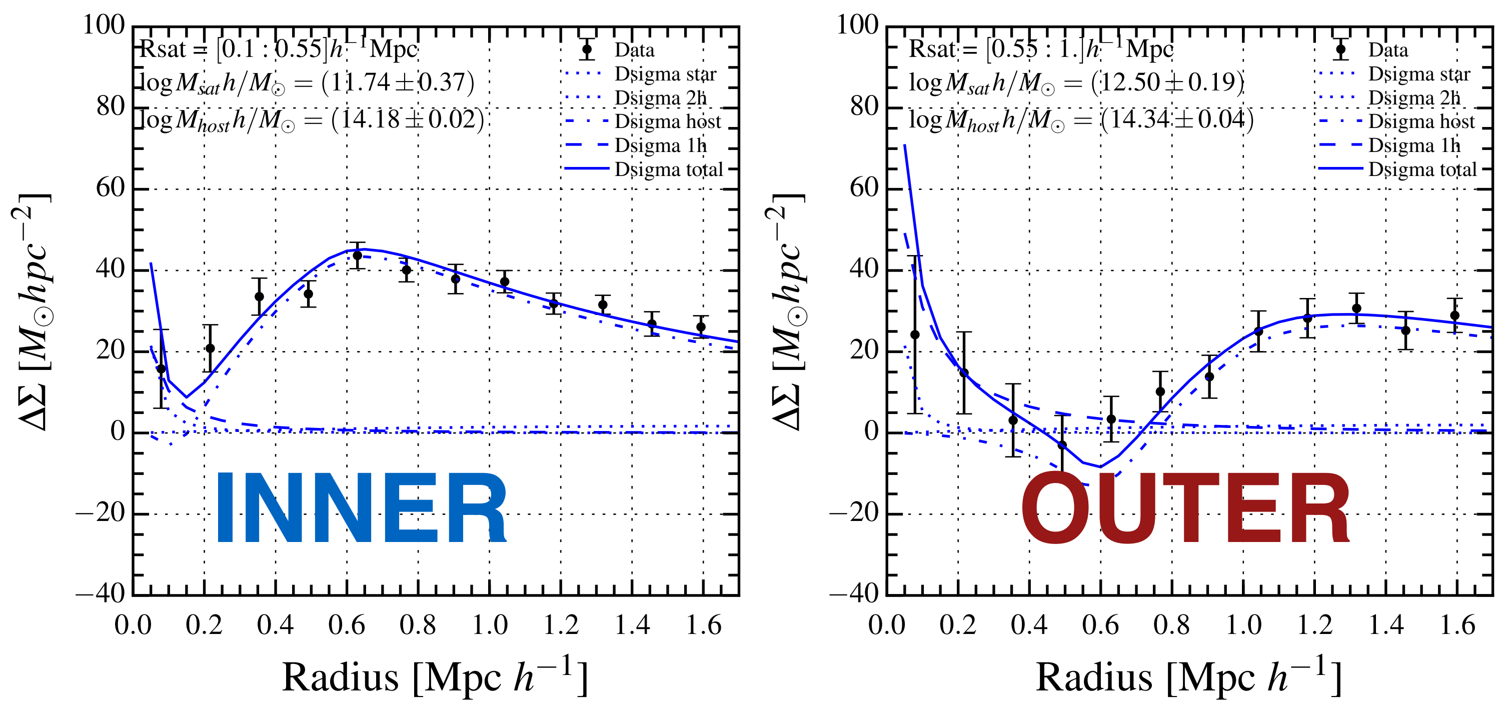
Mass and profile of dark matter halo

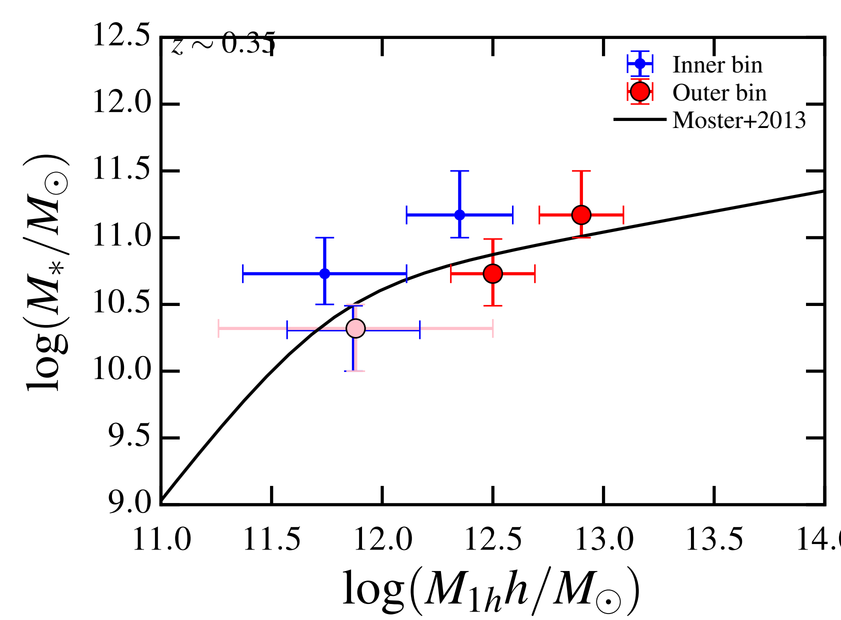


Galaxy-galaxy lensing —> Average measurement over stacked lenses

Tidal stripping of sub haloes in galaxy clusters







DM halo mass of satellites in the inner part of the cluster vs in the outer part

Indirect searches for Dark Matter toward the Sun with neutrinos

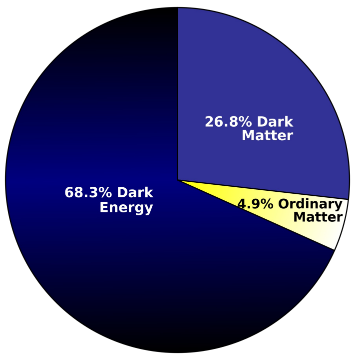
Arturo Núñez-Castiñeyra

Supervisors:
Emmanuel Nezri (LAM)
Vincent Bertin (CPPM)

Collaborator:
Julien Lavalle (LUPM)

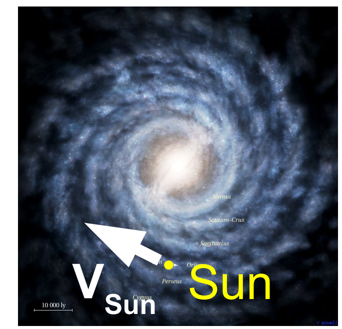
Dark Matter

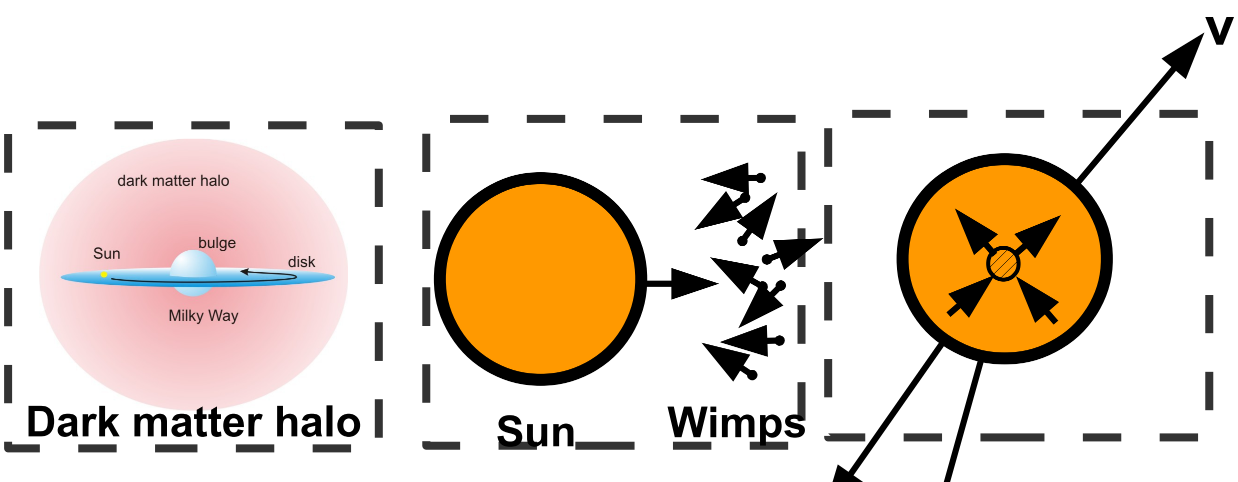
In the Universe
(CMB)

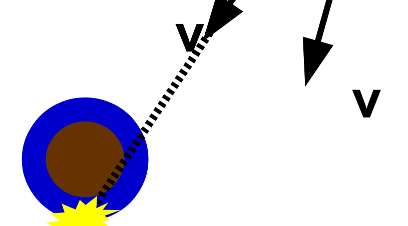


In the Galaxy
(Rotation curves)

In the Sun?
(Neutrino telescopes)







Could be detected by neutrino telescope like IceCube and ANTARES

Capture Rate in the Sun.

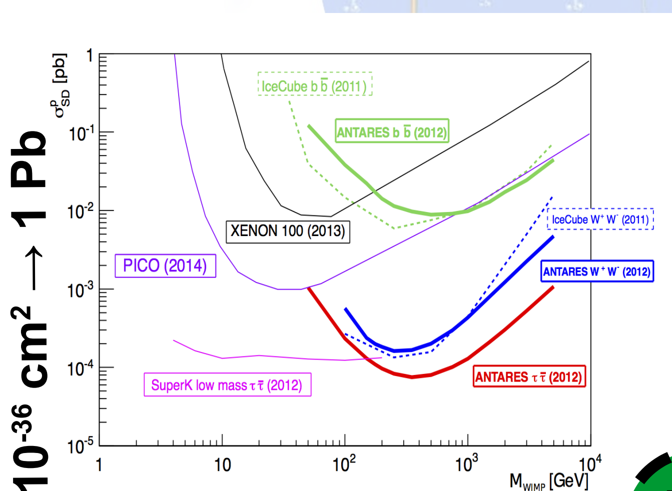
$$\frac{dC}{dV} = \frac{\rho}{M_\chi} \int_0^{u_m} du \frac{f(u)}{u} w\Omega(w)$$

Astrophysics and **Particle Physics** come together

Indirect searches for Dark Matter toward the Sun with neutrinos

Experimental part

- ANTARES neutrino telescope full data set 2007/2016/17
- **improve the sensitivity** of ANTARES in particular to Dark Matter searches
- Study the sensitivity of KM3NeT

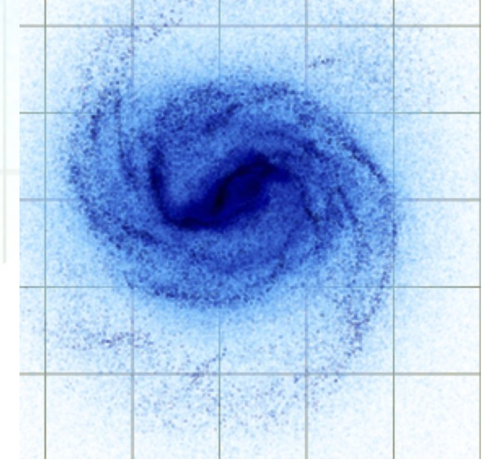


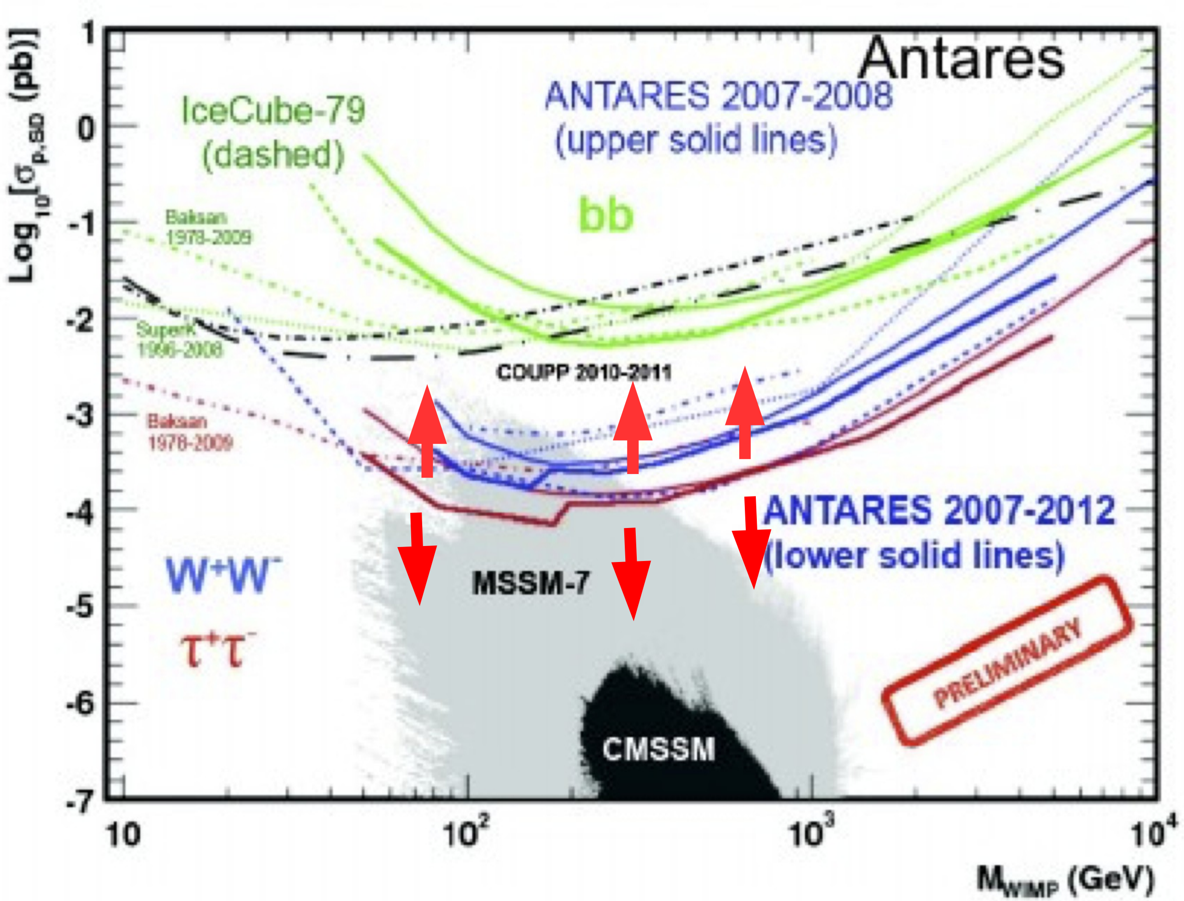
arXiv:1603.02228

Theoretical part

Quantify the astrophysical uncertainties

- Consider the effect of a possible Dark Disc on the f(v)
- Also the effect of non-isotropic f(v) I.e 3D f(v).
- Use cosmological simulations
- Eddington inversion (gravitational potential ↔ phase space distribution)





effects on the exclusion line for different astrophysical assumptions!!

Thank you...

LAM
LABORATOIRE D'ASTROPHYSIQUE DE MARSEILLE

The Milky Way as a Star Formation Engine VIA LACTEA

H_{II} regions and their role in star formation throughout the Galactic Plane

P. Palmeirim, **A. Zavagno**, D. Russeil, P. Merge
and VIALACTEA team members

Outline of my work:

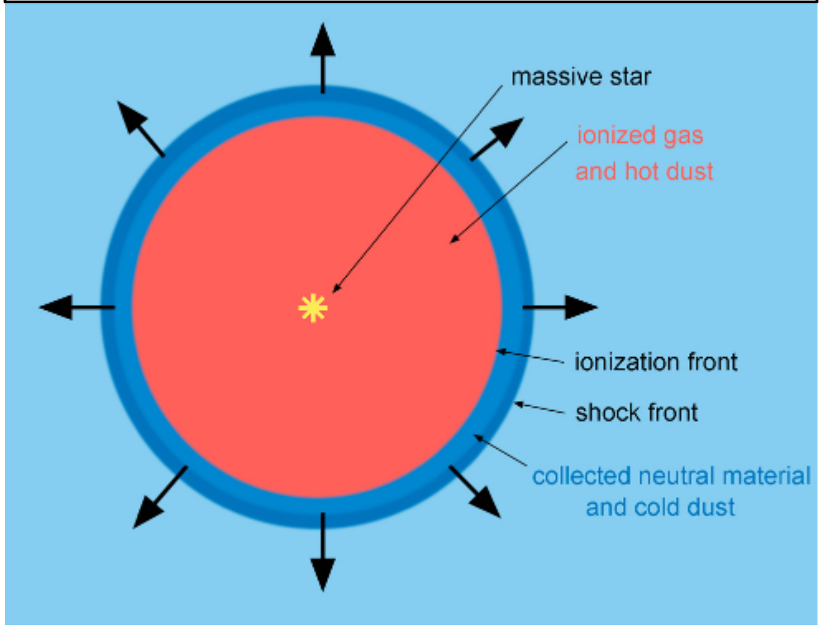
I. The sample and data

- Selection of **H_{II} region sample** using GLIMPSE 360
- The GLIMPSE 360 and the Hi-GAL galactic surveys for **YSOs, prestellar and protostellar source distribution**

II. Large statistics on H_{II} regions

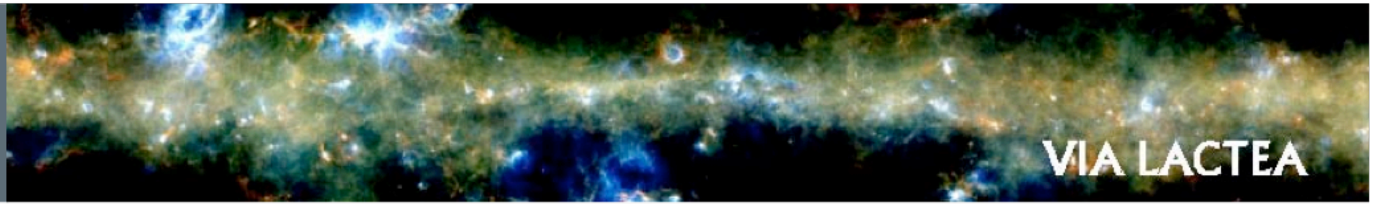
- Spatial distribution of SF objects - **Evolutionary gradient**
- **Dynamic age estimations** of H_{II} regions
- Discussion - **Evidence of triggering** star formation

Model of an expanding H_{II} region



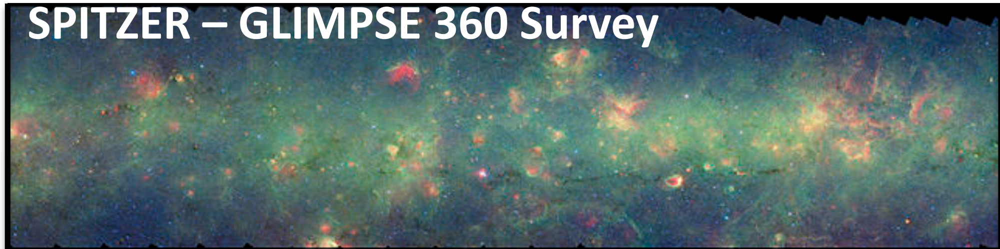
SEVENTH FRAMEWORK PROGRAMME
European Commission
VIALACTEA

LAM
LABORATOIRE D'ASTROPHYSIQUE DE MARSEILLE



Galactic Plane Surveys

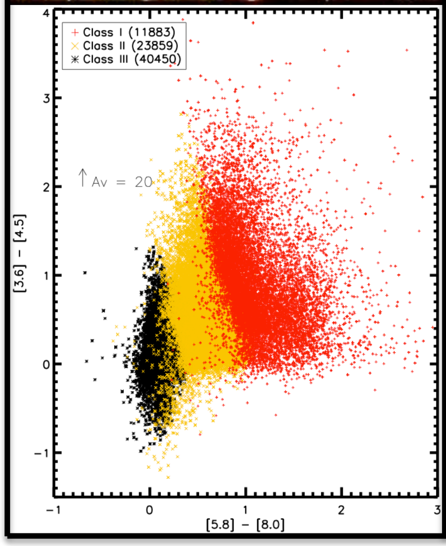
SPITZER – GLIMPSE 360 Survey



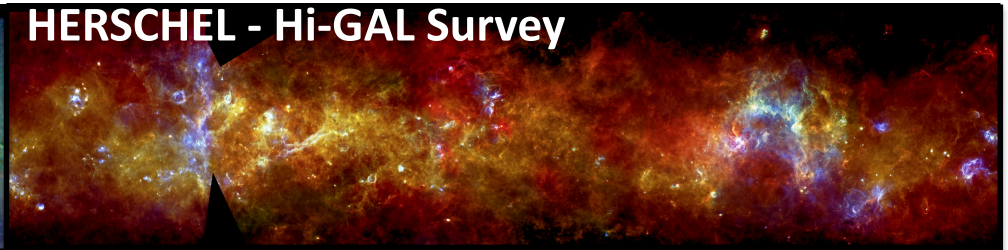
24 μm (red) **hot ionizing gas**
8 μm (green) Polycyclic Aromatic Hydrocarbon (PAH) molecules **tracing PDR**

- 1360 bubbles selected
- Over **75 000 YSO candidates** spatially associated with H_{II} regions (< 4 Radius) analyzed
- YSO **classification** based on the **IR spectral index** (Lada 1987): $\alpha_{IR} = \partial \log(\lambda F_\lambda)/\partial \log(\lambda)$

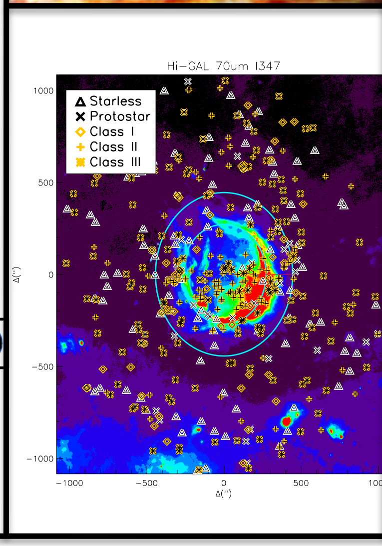
Class I (α_{IRAC} > -0.3)
Class II (-0.3 > α_{IRAC} > -1.6)
Class III (-1.6 > α_{IRAC} > -2.56)



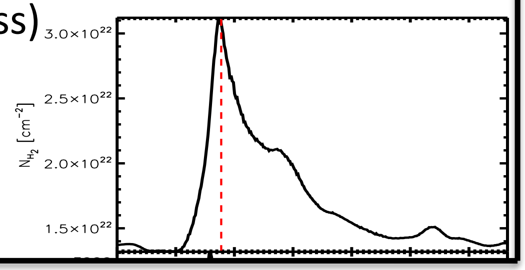
HERSCHEL - Hi-GAL Survey



- Trace the **cold dust in the surroundings**
- ~**50 000 protostellar and prestellar** condensations spatially associated with H_{II} regions

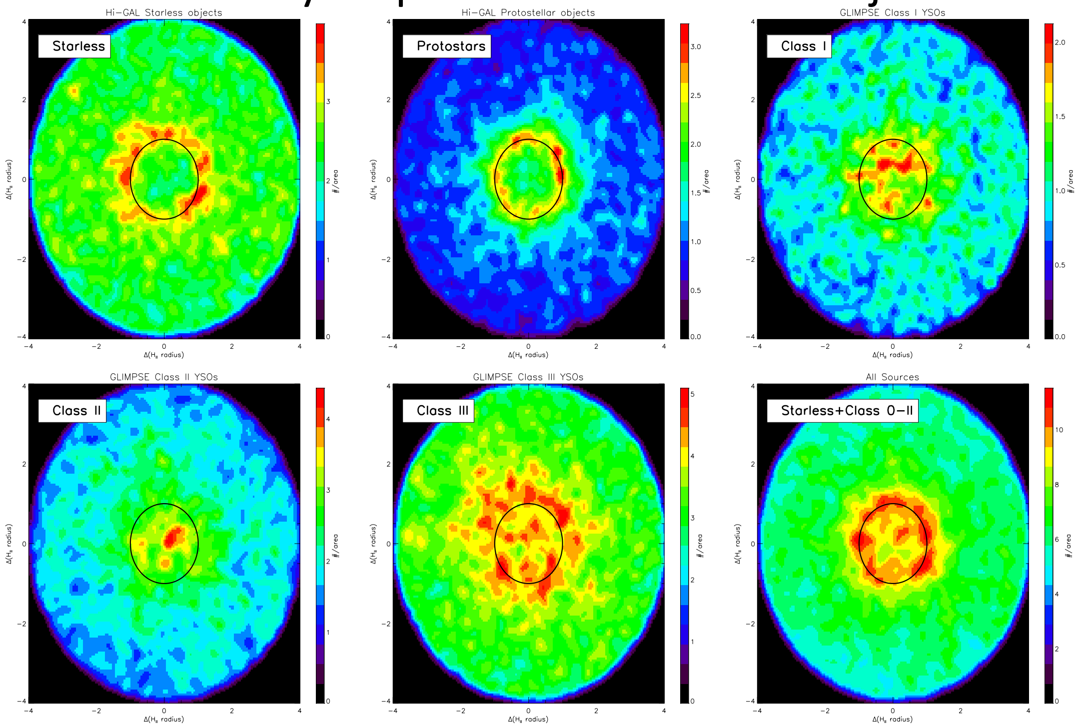


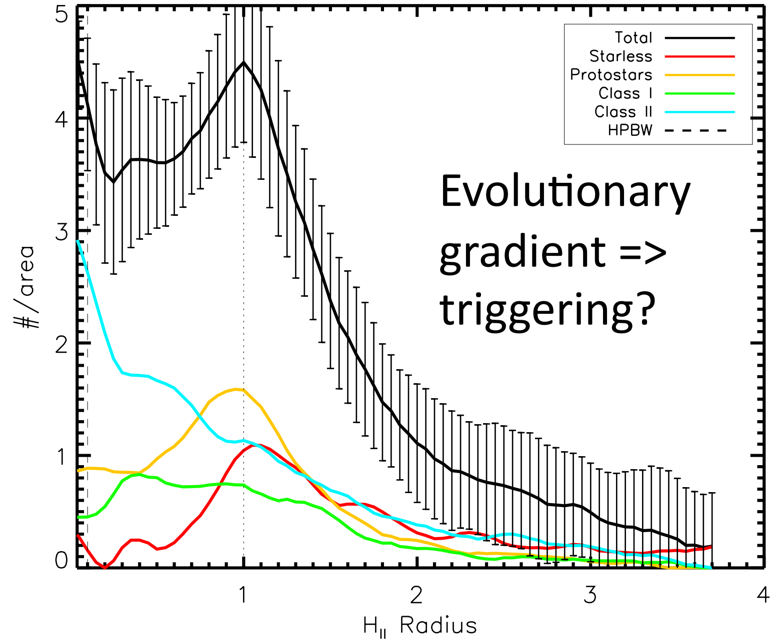
- Spatial distribution of SF objects at different evolutionary stages
- Column density distribution (mass)



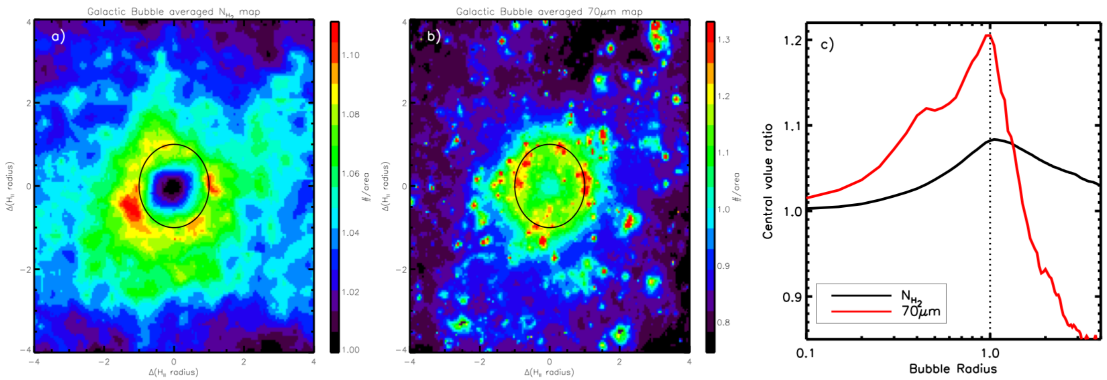
RESULTS:

Surface Density maps of all ~120 000 SF objects





Local environment: Column density and 70 μm emission



CONCLUSIONS:

- **Overdensity of SF objects** surrounding H_{II} regions
- **Evolutionary gradient**
- **Evidence for triggering**
- Age estimates => **evolution of H_{II} regions**
- Evidence for **massive star formation**
- **Paper to be submitted soon**

Isabelle Pâris

Previously...

- PhD in IAP : cosmological evolution of the mean opacity of the intergalactic medium
- Postdoc in uChile (Chile)
- Postdoc in Trieste (Italy)

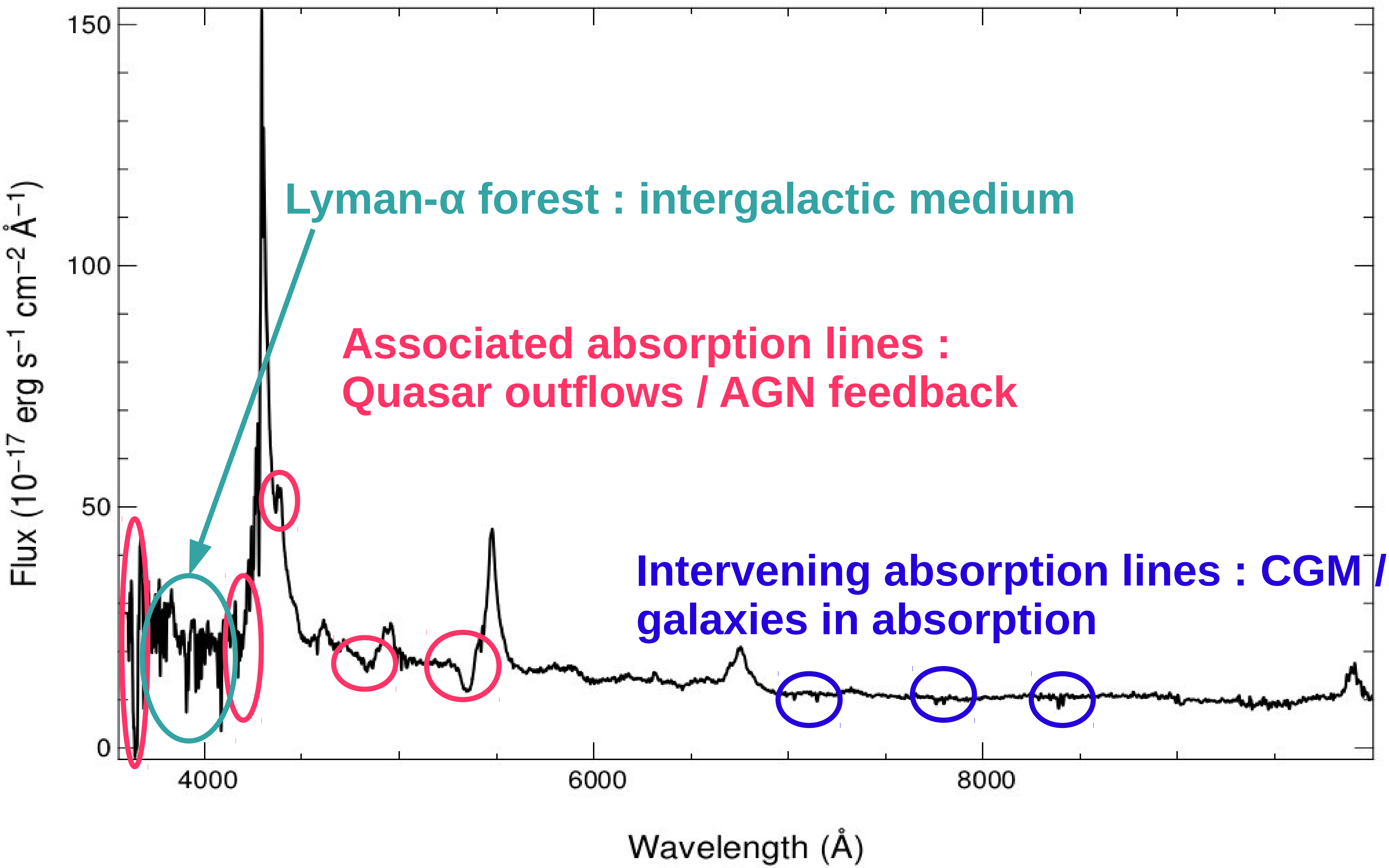
Scientific interests :

- Quasar absorption lines as a probe of gas in the Universe
- Active Galactic Nuclei

Favorite surveys/instruments

- Sloan Digital Sky Survey (SDSS-III/BOSS ; SDSS-IV/eBOSS)
- DESI
- X-Shooter

What can be done with a quasar spectrum ?
(incomplete and extremely biased list)



And during my spare time...

Un stormtrooper sauvé par une cigogne

Une fois n'est pas coutume, la ville de Marseille nous a offert une histoire incroyable d'entraide entre une cigogne et un stormtrooper. Ce dernier perfectionnait son bronzage dans une cabine UV clandestine du premier arrondissement quand il s'est retrouvé bloqué dans ce four à la châleur infernale. Ces cabines UV clandestines sont un des fléaux majeurs présents à Marseille. Leur manque d'entretien entraîne des accidents mortels régulièrement. Le dernier en date était un saint homme, prénommé Honoré, qui a fini brûlé vif dans une cabine du même type il y a une dizaine de jours. Heureusement, toutes les histoires ne finissent pas aussi tragiquement: alors qu'il se pensait perdu et commençait à voir sa peau brunir de façon irréversible, une cigogne l'a entendu frapper contre la porte de cet enfer. Elle n'a écouté que son courage et a forcé la porte de ce four pour libérer ce pauvre stormtrooper qui était à deux doigts de suffoquer. Ce sauvetage périlleux n'a fait aucune victime collatérale, malgré la présence de dix doigts dans la zone. Les pompiers sont arrivés à temps pour réanimer la pauvre victime.

Après toutes ces aventures, le stormtrooper poire et chocolat a tenu à remercier son sauveur en lui proposant une place du côté obscur de la force. L'histoire ne nous dit pas encore si la cigogne a quitté son emploi dans le domaine de la livraison pour rejoindre la Vador Inc...

Kinematics of COSMOS star-forming galaxies over the last 8 Gyr

Debora Pelliccia
Laboratoire d'Astrophysique de Marseille

PhD Advisor: Laurence Tresse

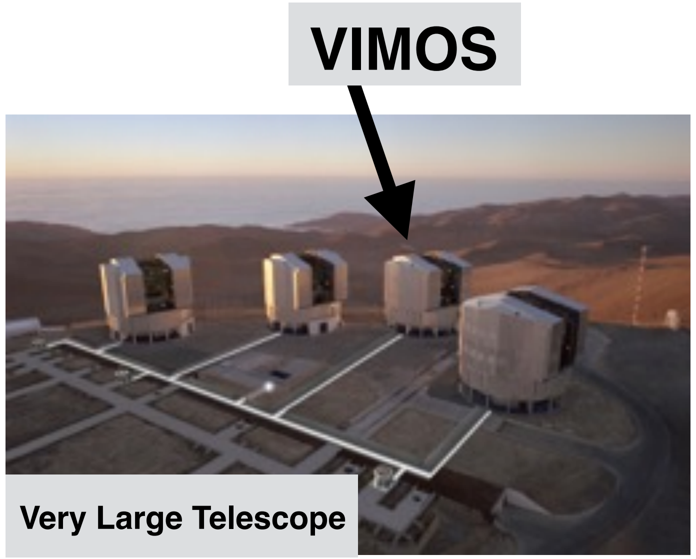
Collaborators: Benoît Epinat, Olivier Ilbert, Philippe Amram, Nick Scoville, Brian Lemaux

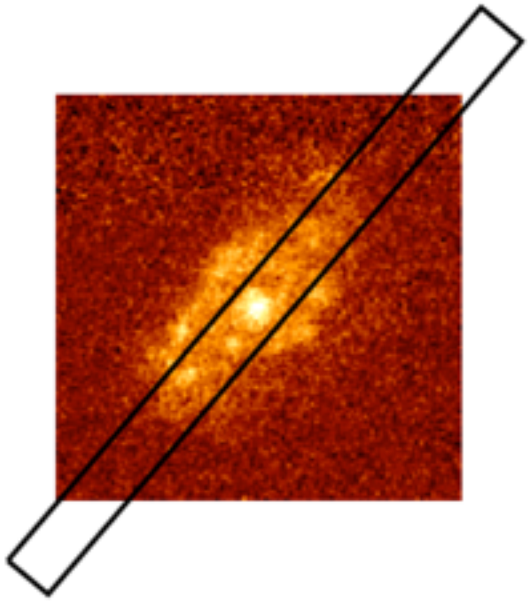
GECO Day@Marine d'Endoume
june 28th 2016

Our Spectroscopic Observations

(PI: Laurence Tresse)

HR (R=2500)VIMOS Multi-object spectroscopy over the **COSMOS** field

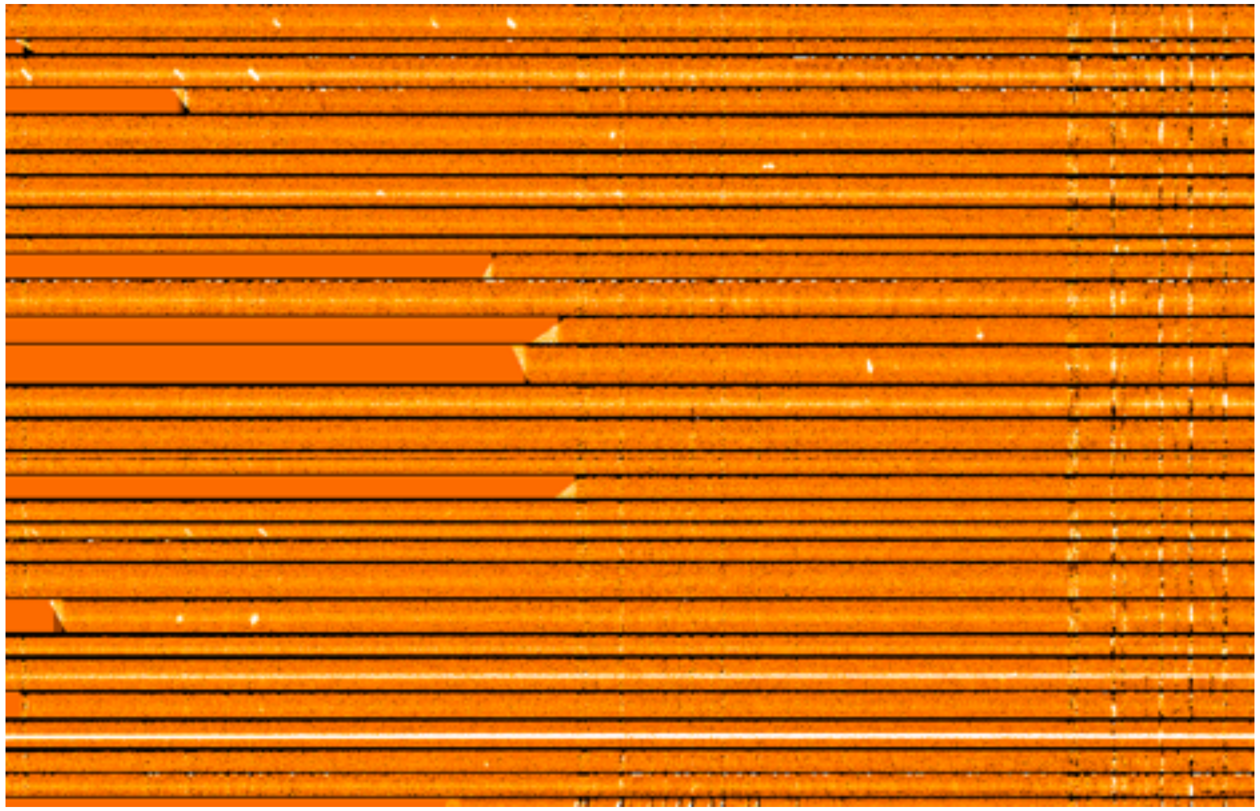




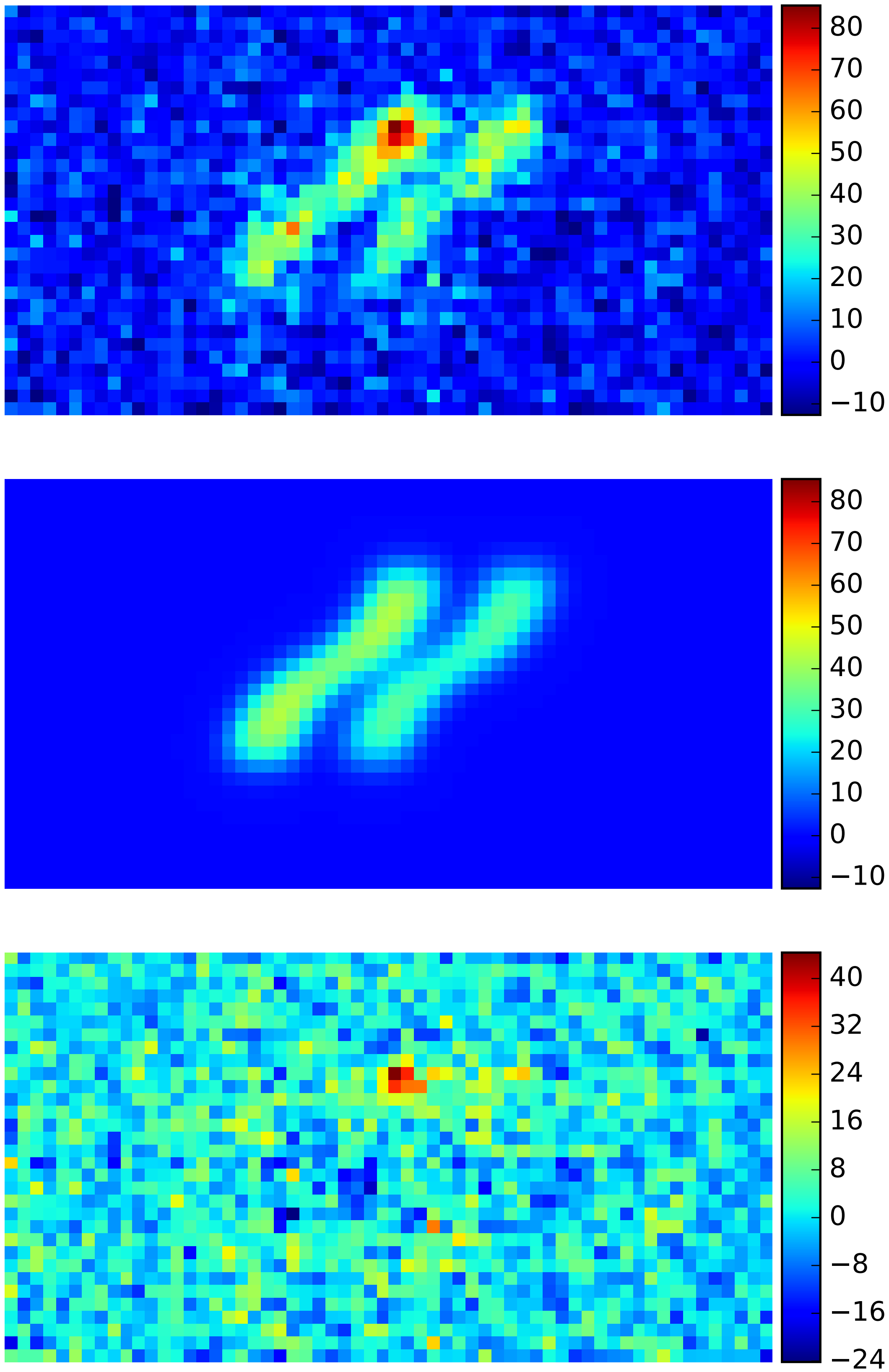
x 766 galaxies at 0. < z < 1.2

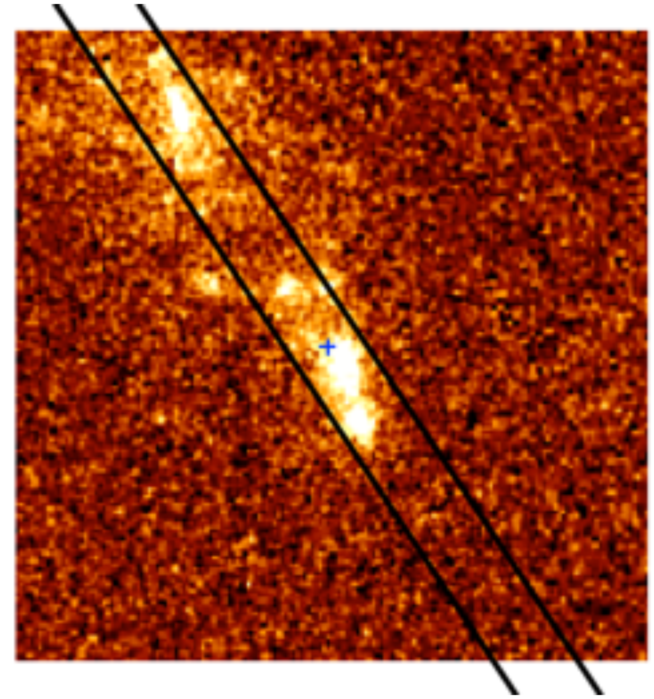
Raw Exposure

2D "rectified" reduced spectra



Kinematic models



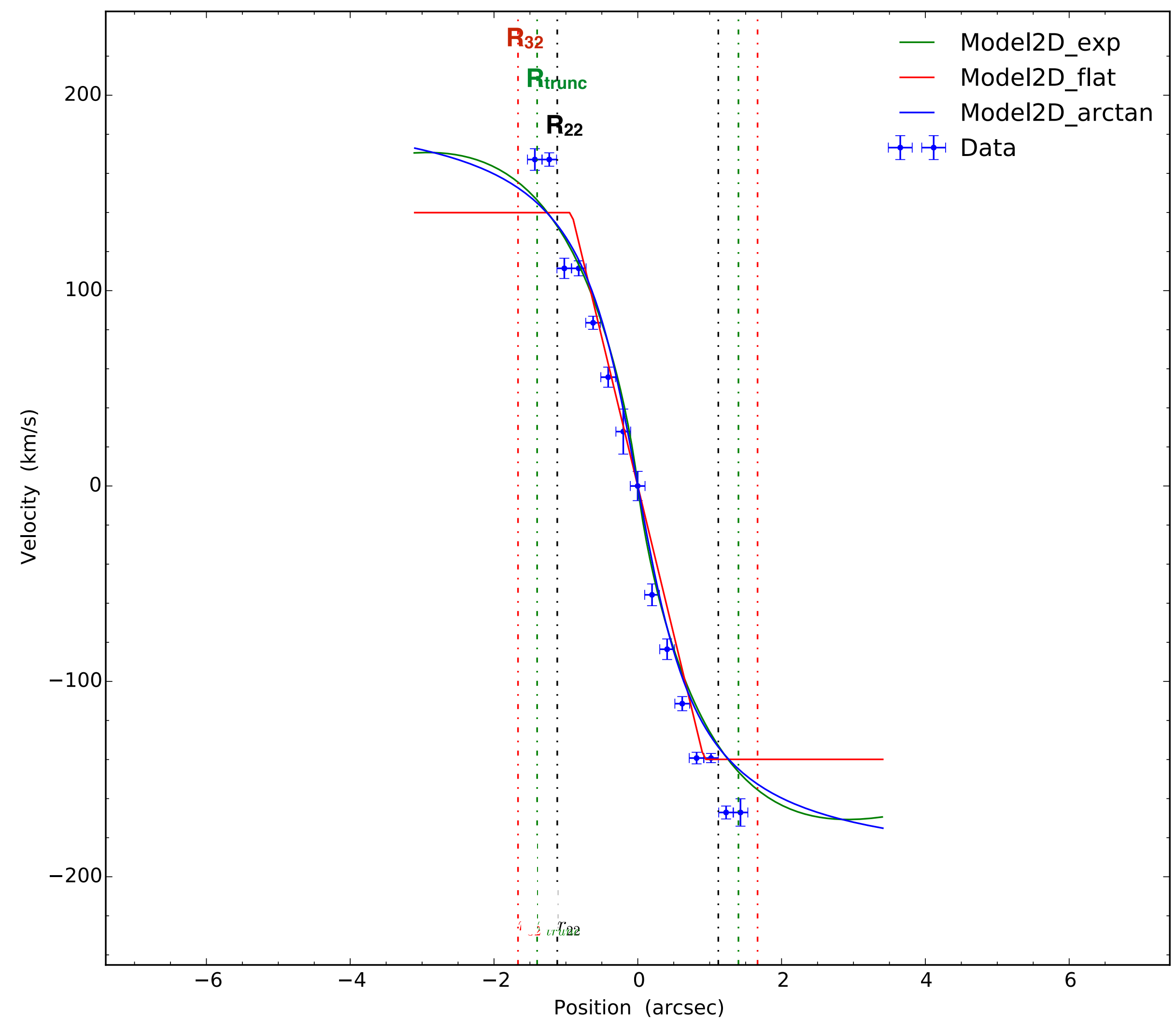


ID824746

z = 0.8467

$M_{star} = 10^{9.9} M_{sun}$

$M_I = -21.895$



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HR-Cosmos⋆: Kinematics of Star-Forming Galaxies at z ∼ 0.9

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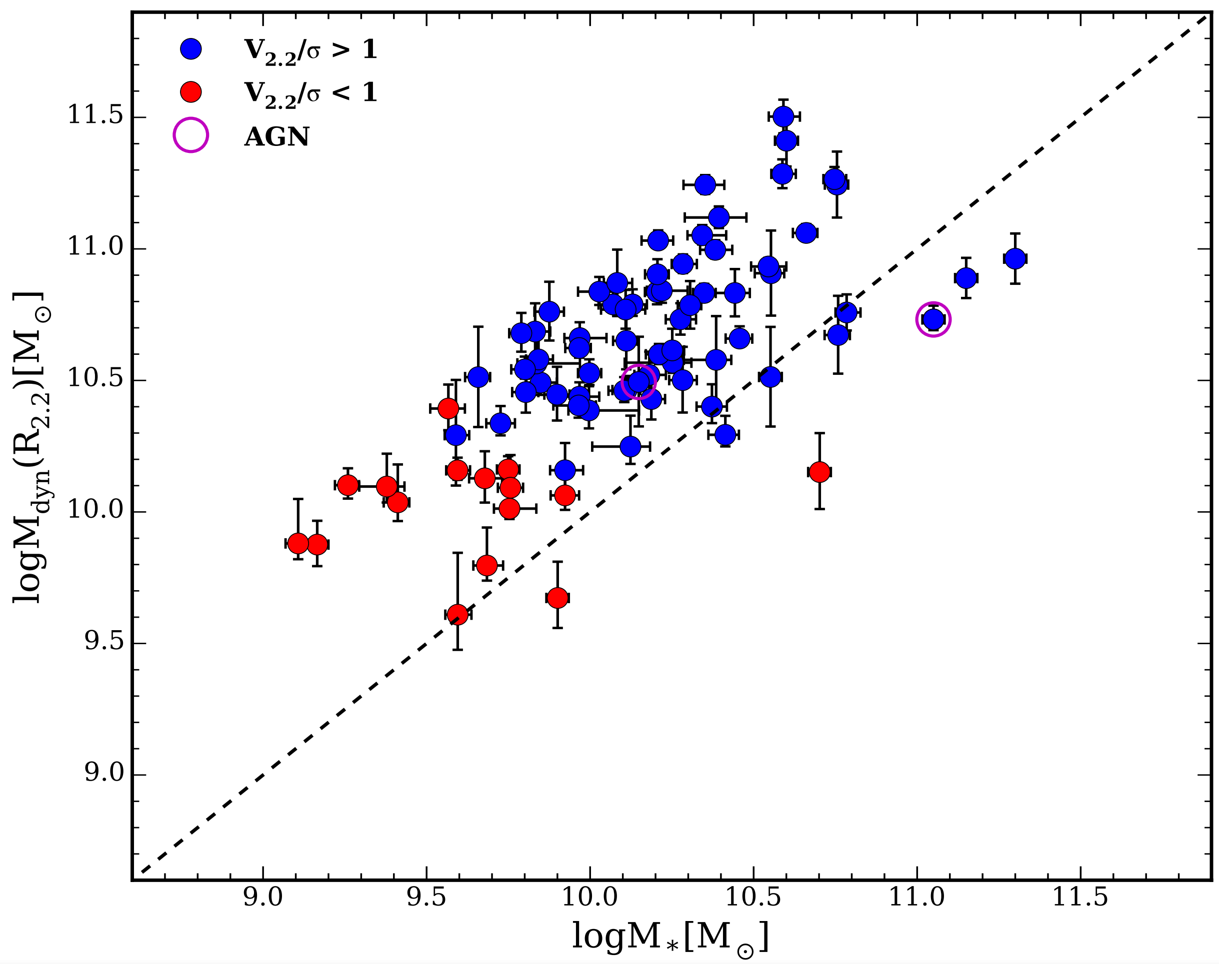
Received Month day, year; accepted Month day, year

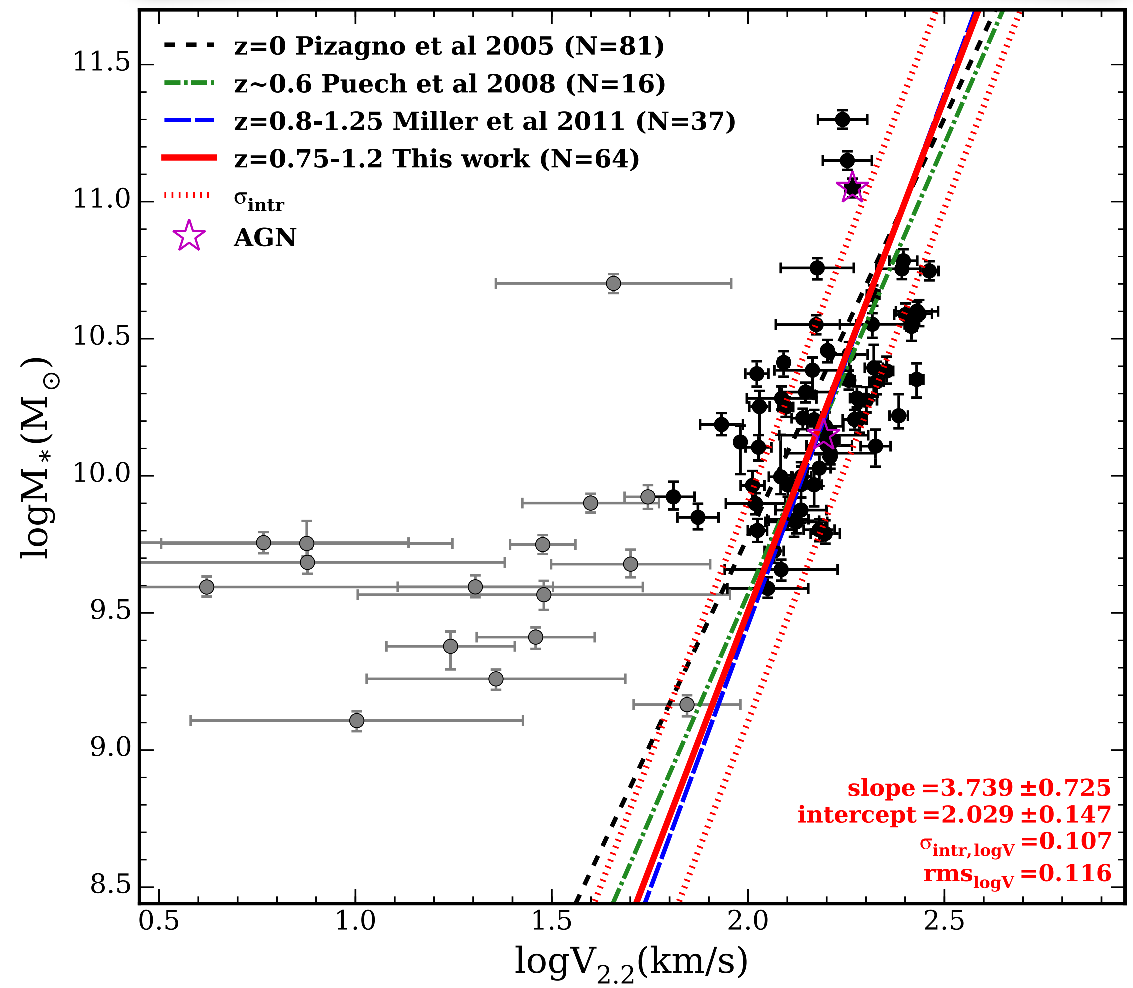
ABSTRACT

We present our new survey HR-COSMOS aimed to obtain the first statistical study on the kinematics of star-forming galaxies in the treasury COSMOS field at $0 < z < 1.2$. We observed ∼ 1000 emission line galaxies using the multi-slit spectrograph VIMOS in high-resolution mode ($R = 2500$). To better extract galaxy kinematics, VIMOS spectral slits have been tilted along the major axis orientation of the galaxies, making use of the position angle measurements from the high spatial resolution ACS/HST COSMOS images. We present here the results of a sub-sample of 82 galaxies at $0.75 < z < 1.2$. We created high resolution semi-analytical models to constrain the kinematics. We established the stellar-mass Tully-Fisher relation at $z \sim 0.9$ by using high-quality stellar mass measurements derived using the latest COSMOS photometric catalog, which includes UltraVista and Spitzer latest data releases. In doubling the sample at these redshifts compared with the literature, we estimated the relation without setting its slope, and find it consistent with previous studies in other deep fields assuming no significant evolution of the relation with redshift at $z \lesssim 1$. We computed dynamical masses and found a median stellar-to-dynamical mass fraction equal to 0.32, which implies a contribution of gas and dark matter masses of 68% of the total mass, in agreement with recent integral field spectroscopy surveys. We find no dependence of the stellar-mass TF relation with environment on group scales. We believe that multi-slit galaxy surveys remain a powerful tool to derive kinematics over large deep redshift surveys.

Key words. galaxies: evolution – galaxies: kinematics and dynamics – galaxies: high-redshift – galaxies: statistics – surveys



Stellar Mass Tully-Fisher at z~0.9



Dynamical Mass vs Stellar Mass

Mat Pieri

Debopam Som

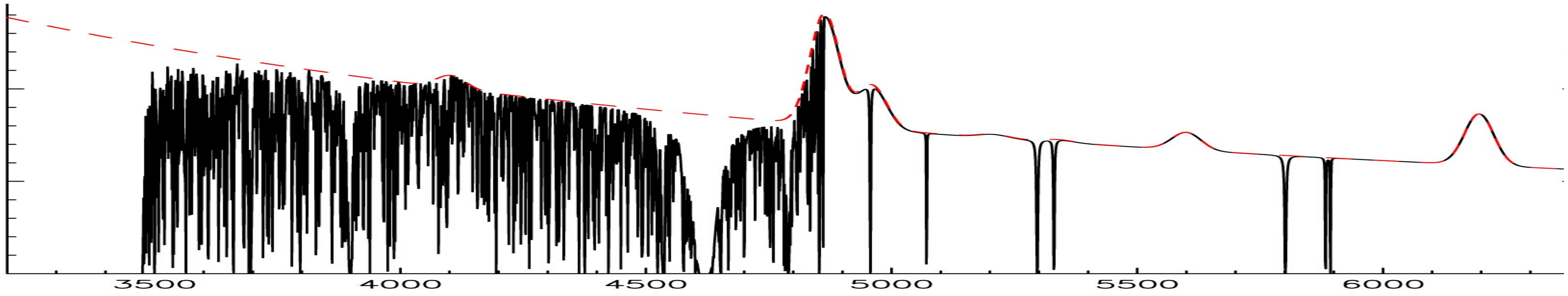
A*Midex Postdoctoral Fellow (September, 2015 - …)

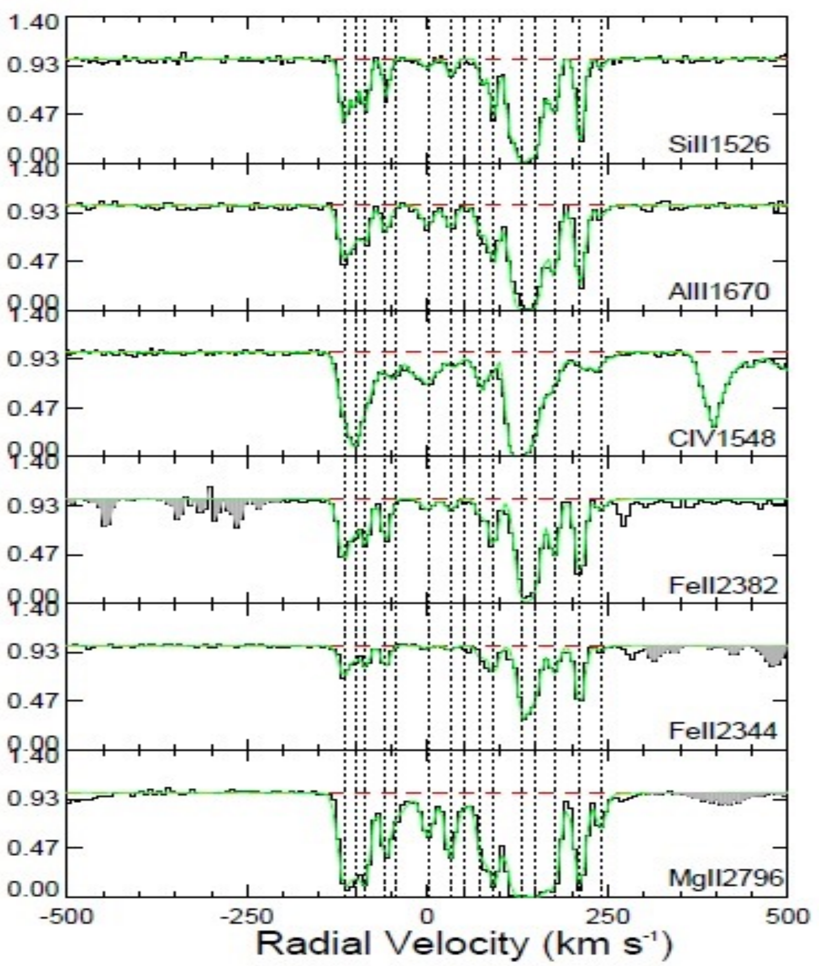
From:

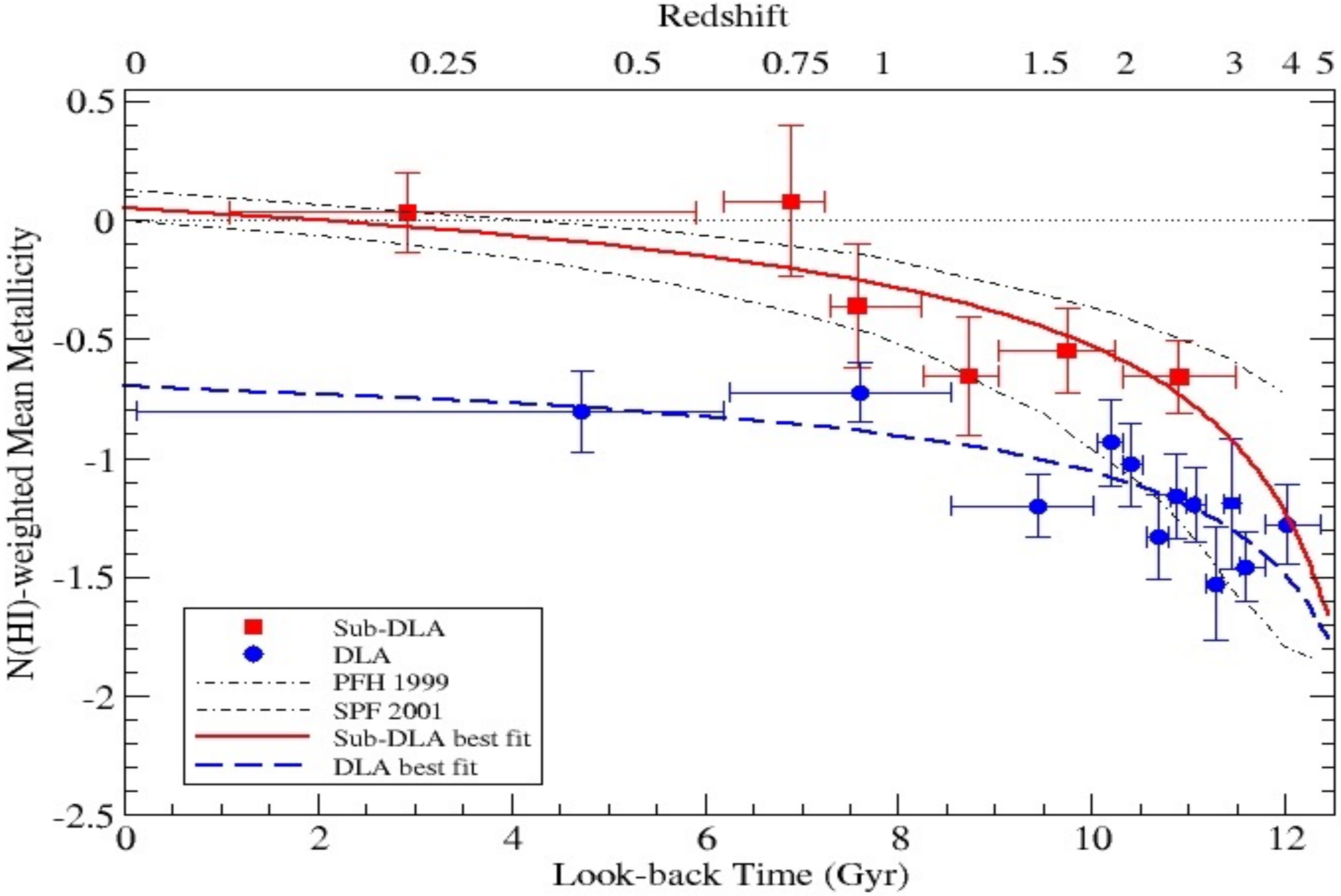
- Bachelor of Science (Physics) - University of Calcutta. India
- Master of Science (Physics) - IIT-Delhi. India
- Ph.D (Physics) - University of South Carolina, Columbia. USA

- Gas, metals and Galaxies - CGM - IGM

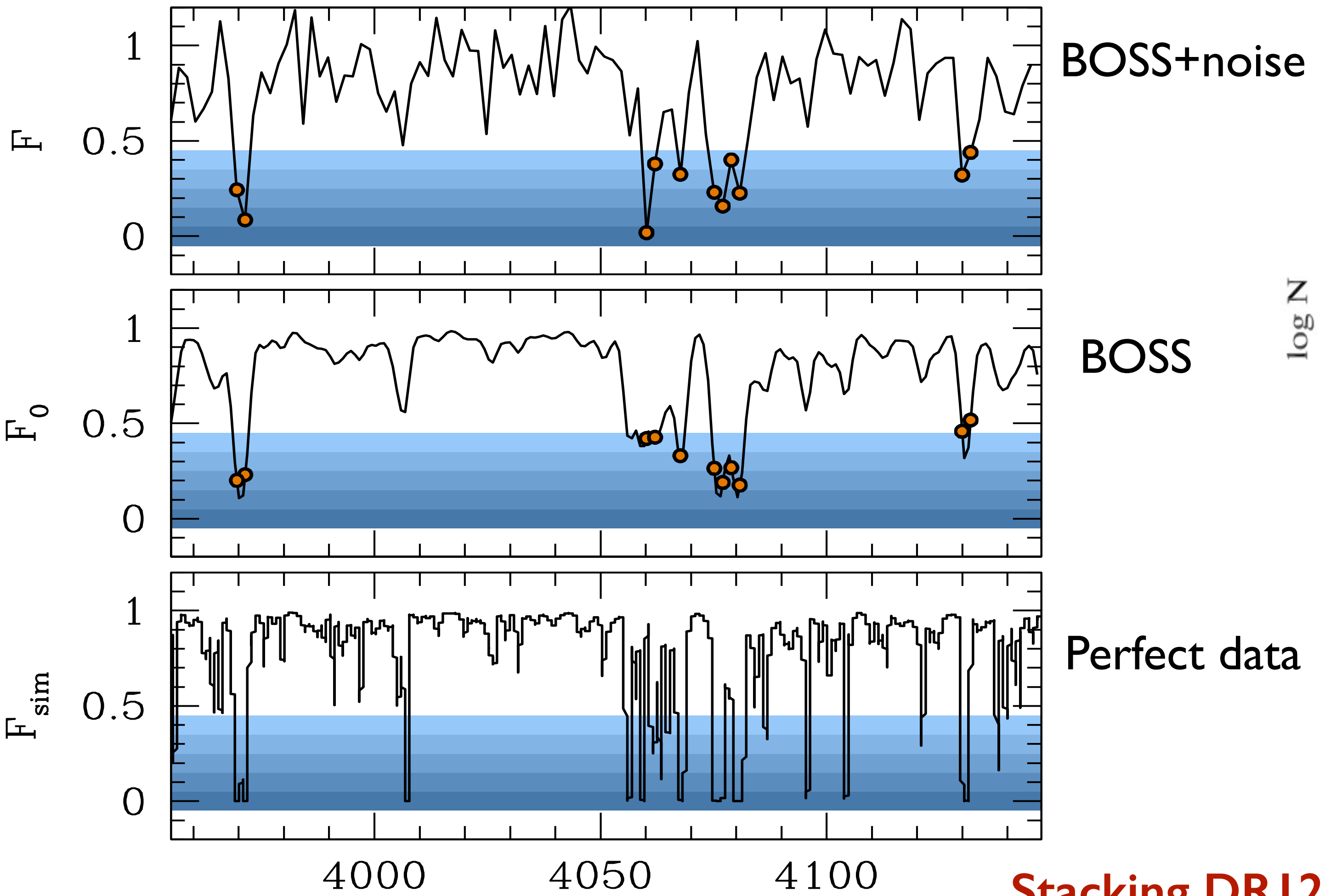
- Chemical and kinematic properties of Quasi-Stellar Object Absorption Line Systems

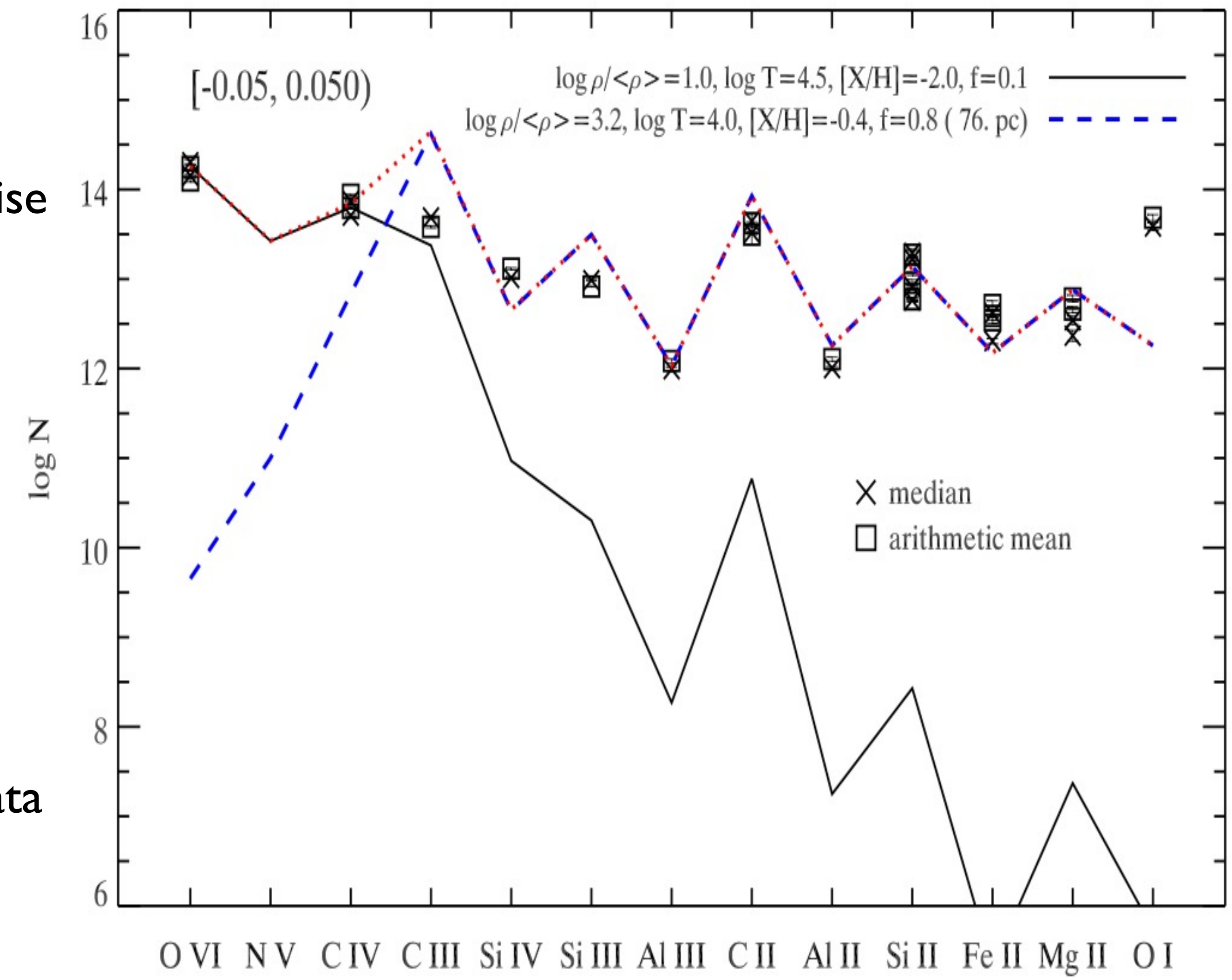






- **Blended HI as a Proxy for CGM**





Stacking DR12 Sample