



# Spectroscopic Redshift Surveys in OCEVU Dark Energy, Galaxy Evolution and Reionization

Project Coördinator: Laurence Tresse



GAHEC Team/Roser Team



Renoir Team/Anne Ealet

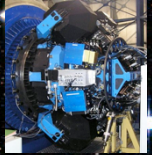


Cosmology Team/Laurence Tresse



# Context of the Project

VIMOS-ESO



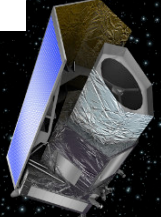
LAM  
IRAP

Multi Object Spectrograph since the 90's  
The Expertise in France IS within the OCEVU labs

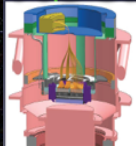
Euclid  
Consortium

ESA

LAM  
CPPM  
IRAP



PFS-Subaru



LAM

EELT-MOS studies

LAM  
IRAP

Spectroscopic Redshift Surveys  
Wide – Deep – UltraDeep

Large Scale Structures

Demographic Knowledge  
of the Sources

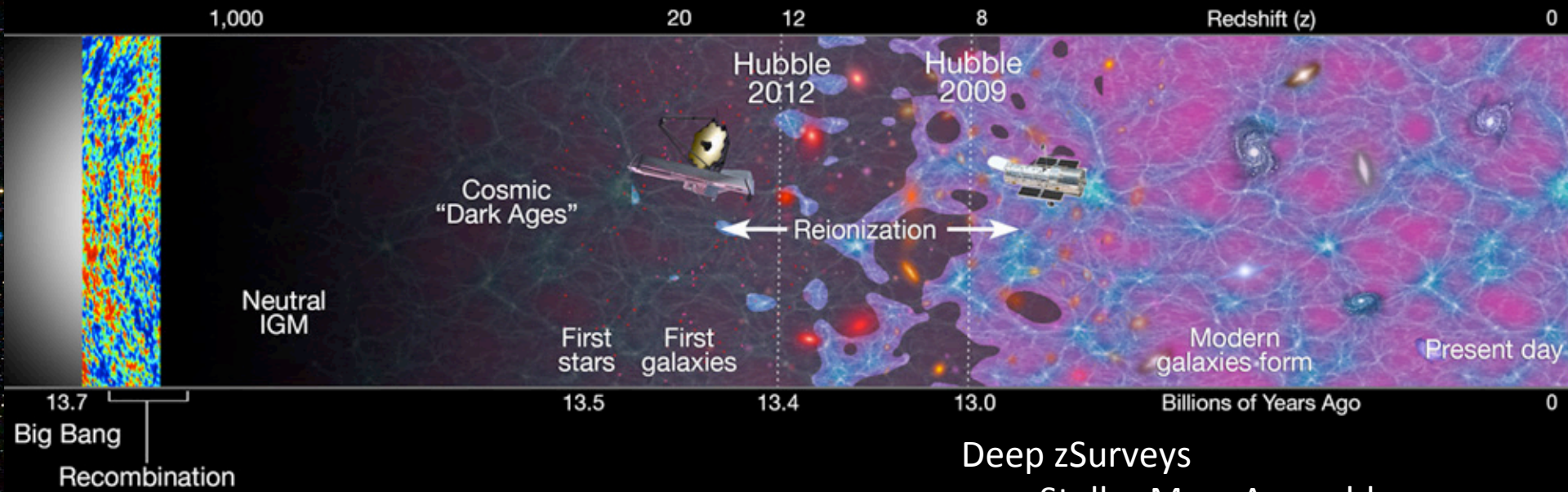
Early Universe



# Context of the Project

UltraDeep zSurveys  
Early Universe  
First Sources & Reionization  
Need to be discovered

Wide zSurveys  
Accelerating Universe  
Structure Growth Probes  
RSD, WL  $\leftarrow$   
Geometrical Probes  
SN, BAO  $\leftarrow$

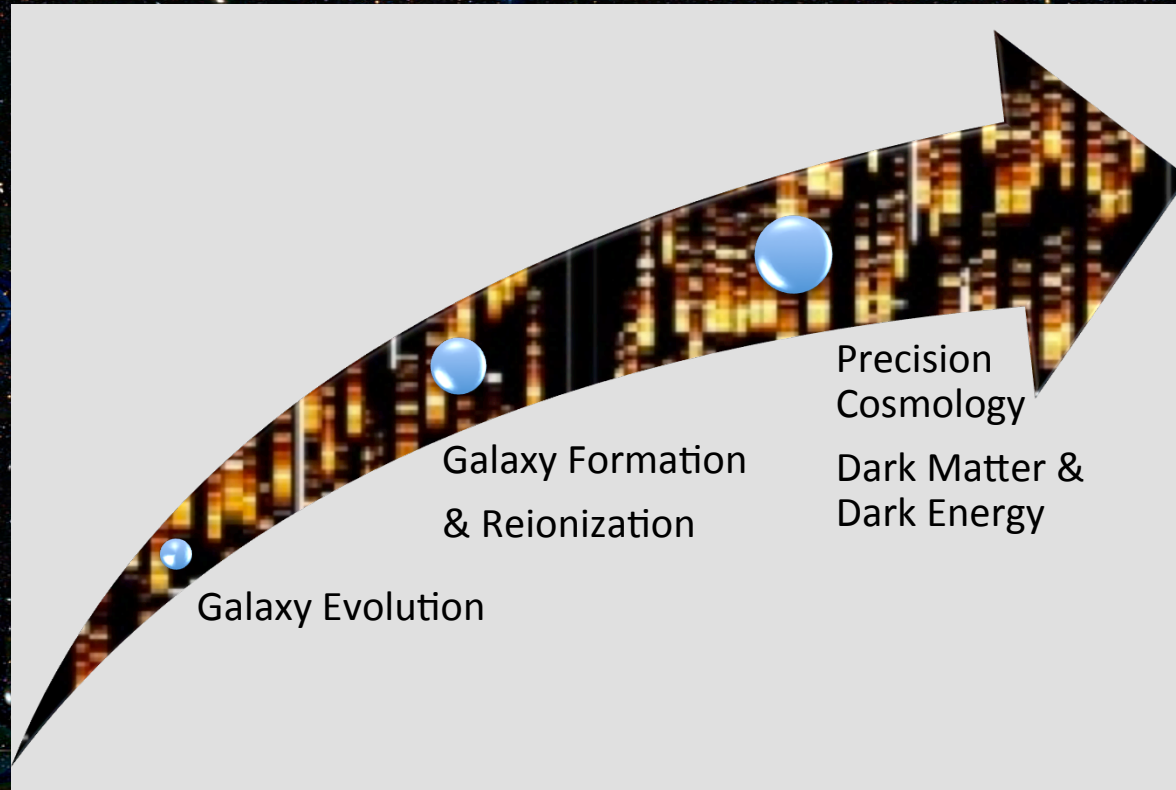


Deep zSurveys  
Stellar Mass Assembly  
Anti-hierarchical  
Massive objects form first  
Studies  $z > 2$  galaxy population



# Objectives of the Project

---





# Roadmap

- ✓ Exploiting on-going zSurveys
- ✓ Be prepared for the exploitation of future major zSurveys

Spectroscopic Surveys	VIPERS	VUDS	BOSS	GOYA	eBOSS	PFS	BigBOSS	Euclid
Starting					2015	2017	2018	2020
Galaxy Evolution	LAM	LAM IRAP		IRAP LAM	LAM	LAM	LAM	LAM IRAP
Precision Cosmology	LAM	LAM	CPPM LAM	-	CPPM LAM	LAM	CPPM LAM	CPPM LAM IRAP



# Job Offer Roadmap

---

Position	2013	2014	2015	2016	2017	2018	2019	2020
PhD	3 years IRAP/LAM	3 years CPPM		3 years IRAP	3 years LAM			
Postdoc	3 years LAM/CPPM		3 years IRAP		3 years LAM	3 years CCPM		



# The OCEVU Job Positions

---

## Two arrivals in 2013

- ✓ 1 OCEVU PhD between IRAP/LAM (Pello/Cuby/Tresse)

### **Galaxy assembly within the first billion years**

David Bina

- ✓ 1 OCEVU Postdoc between LAM/PPPM (Jullo/Ealet/Le Fèvre/Escoffier)

### **Constraining dark energy using Redshift Space Distortion and Weak Lensing probes**

Sylvain de la Torre



# Job Offer Updated Roadmap

Position	2013	2014	2015	2016	2017	2018	2019	2020
PhD	3 years IRAP/LAM	3 years CPPM		3 years IRAP	3 years LAM			
Postdoc	3 years LAM/CPPM		3 years IRAP		3 years LAM	3 years CCPM		

OK  
2yr PD

PhD but  
not  
fullfilled

1yr  
PD@CPPM

no PhD



# The Collaborative Scientific Aspect

---

## LAM & IRAP

long record of collaborative projects

e.g. ANR MASSIV, ANR REGALDIS, proposals PNCG, survey collaborations: VVDS, zCOSMOS, VUDS, GOYA, WUDS,....

## LAM & CPPM

more recent collaborations

e.g. ANR SDSS-III, ANR Omega, survey collaborations: BOSS, eBOSS,...

## LAM & IRAP & CPPM

all in Euclid OUs and SWGs

# The Initial Team

---

**IRAP** : A. Blanchard, F. Boone, N. Bouché, R. Cabanac, T. Contini, J.-F. Le Borgne, M. Hayes, R. Pello

**CPPM** : M.-C. Cousinou, A. Ealet, S. Escoffier, V. Gonzalez, C. Tao, A. Tilquin, J. Zoubian

**LAM** : J.-G. Cuby, O. Ilbert, E. Jullo, O. Le Fèvre, L. Tresse



# The Updated Team in 2015

---

**IRAP** : ~~A. Blanchard~~, F. Boone, N. Bouché, R. Cabanac, T. Contini, J.-F. Le Borgne,  
~~M. Hayes~~, R. Pello, D. Bina

**CPPM** : M.-C. Cousinou, A. Ealet, S. Escoffier, ~~V. Gonzalez~~, C. Tao, A. Tilquin,  
~~J. Zoubian~~, A. Pisani

**LAM** : J.-G. Cuby, O. Ilbert, E. Jullo, O. Le Fèvre, L. Tresse, S. Arnouts, M. Pieri, S.  
de la Torre, A. Niemiec



# Challenge within the OCEVU

---

- ✓ to foster scientific exchanges
  - ✓ to share expertises
  - ✓ to develop our visibility
- within the foreseen large international zSurveys



# Achievements within the zSurveys-OCEVU

---

Started Fall 2013

Kick-Off Meeting at LAM Jan 2014

This second meeting Dec 2015

- ✓ XX publications with OCEVU acknowledgments  
*(don't miss them ! As well the logo in OCEVU in the presentations)*
- ✓ Recruitment of S. de la Torre @LAM in 2015  
Lead of the WP-Galaxy Clustering in Euclid (and co-lead in OU-LE3)
- ✓ All projects undergo progress (see report 2015)  
Up to now links between LAM & CPPM, and LAM & IRAP

Projects are numerous, so we gather mostly within project-oriented meetings rather than the whole zSurvey framework.....

**These projects are somehow all preparatory to the Euclid mission**

From 2016, the project coordinator is officially E. Jullo