

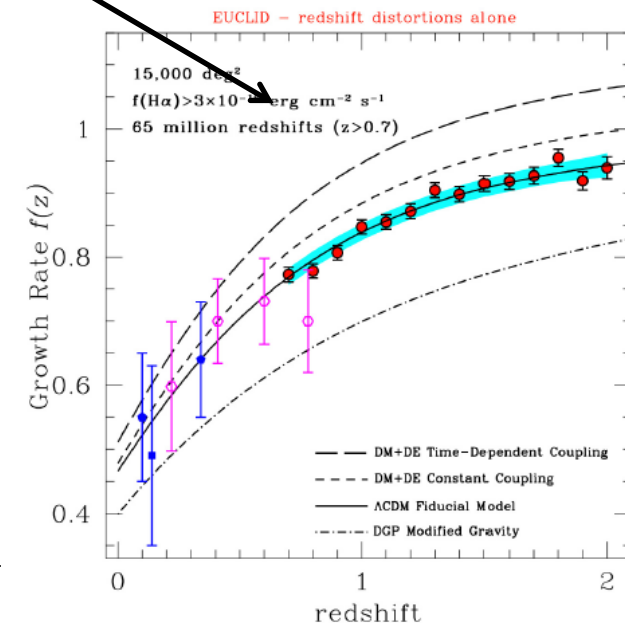
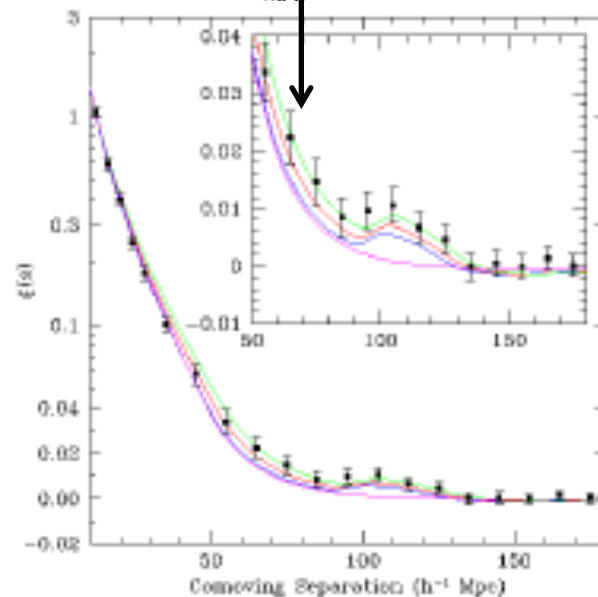
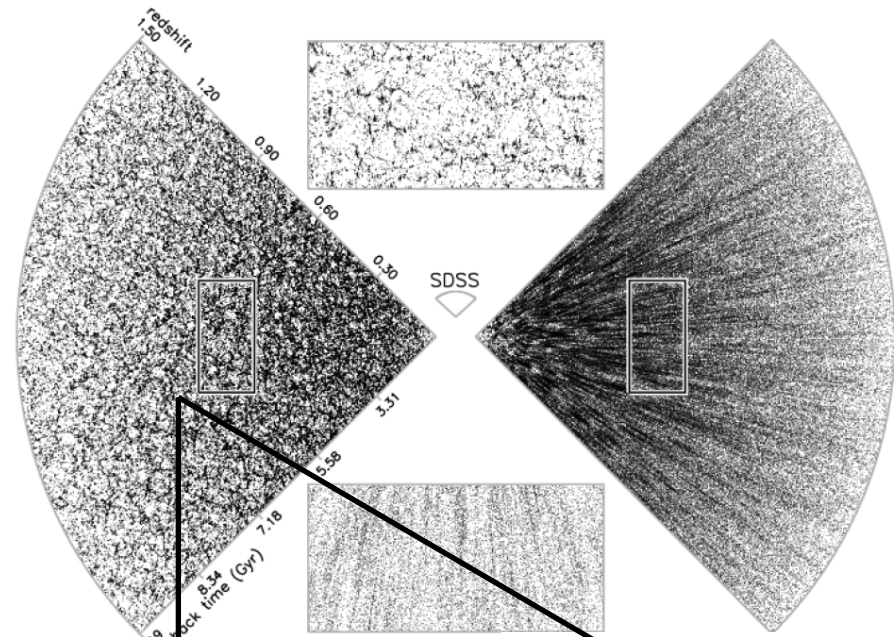


OU-SPE
Current status

Main goal
Main issues
Work progress

Redshift : a key measurement for Euclid

- Main clustering probes:
 - BAO
 - RSD
- Requires velocity accuracy



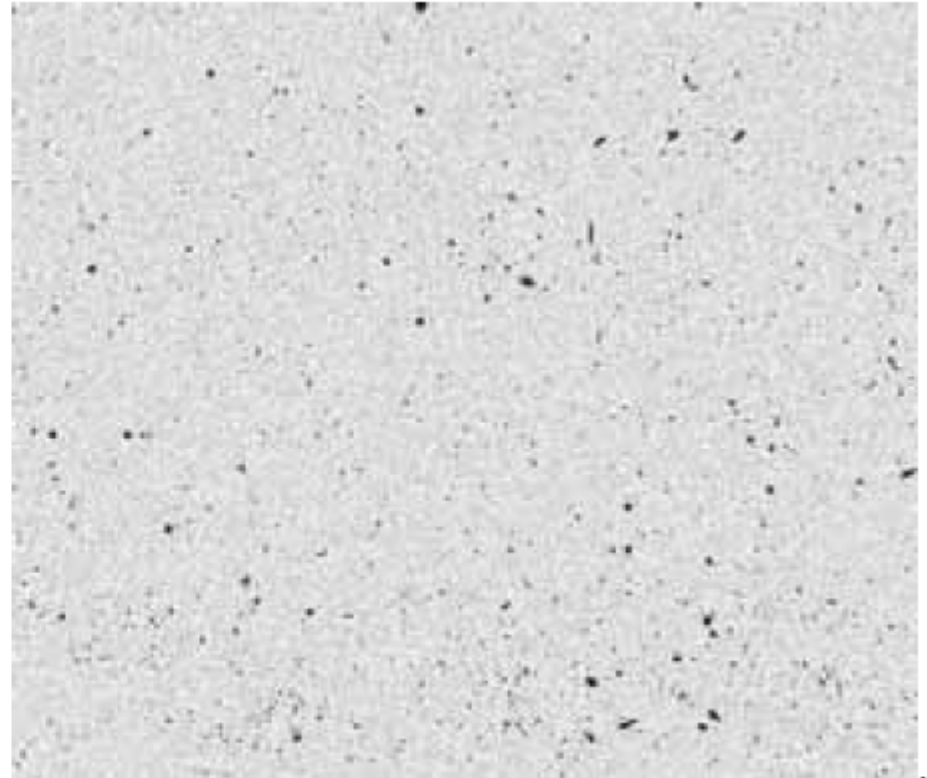
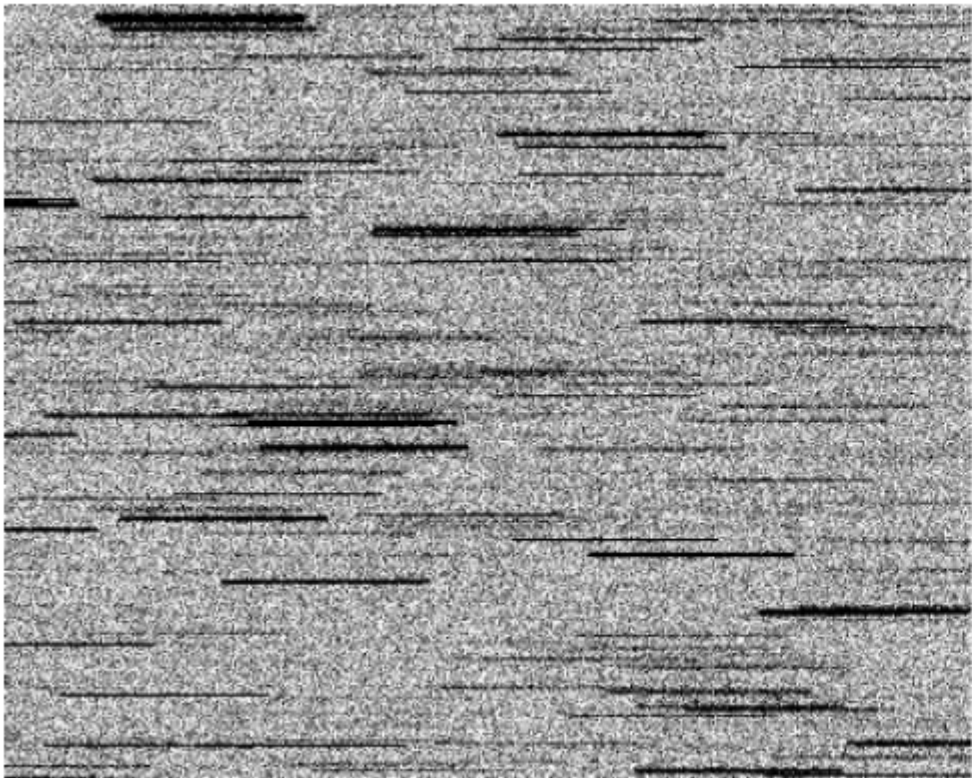
OU-SPE GOALS

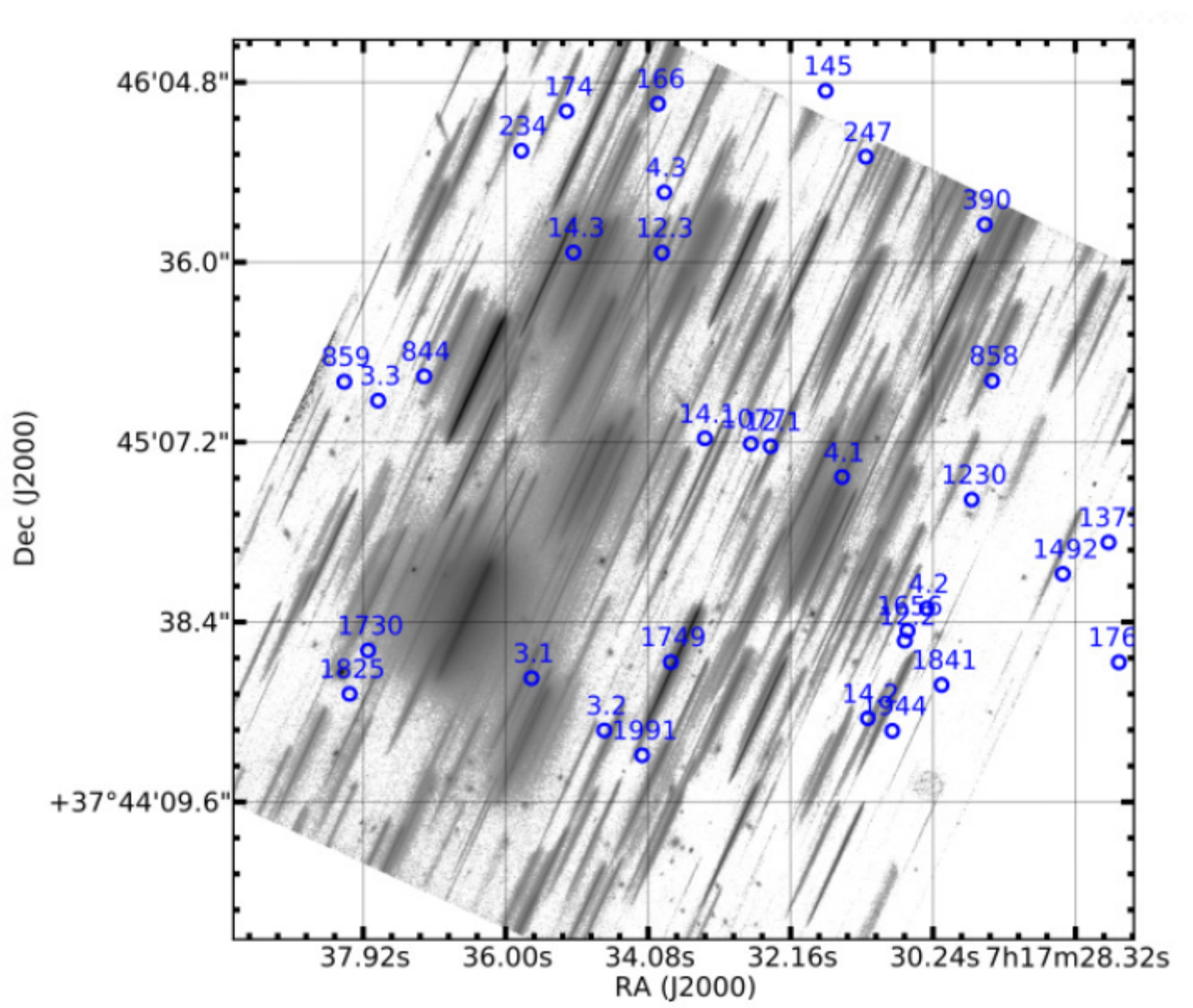
Produce methods and algorithms for spectrophotometric measurements from NISP spectroscopy data:

- Spectral lines, continuum
 - REDSHIFT
 - Rest-frame / absolute parameters
-

OU-SPE: main issues

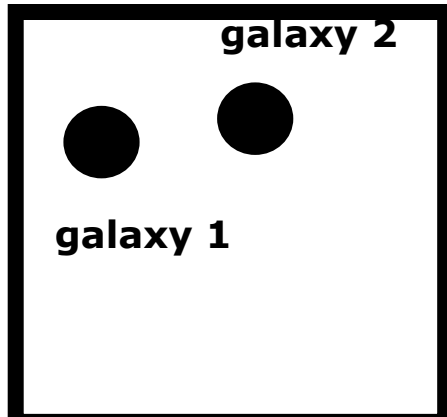
- NISP will produce slitless spectroscopy
- This implies superimposition of spectra from different objects (at different redshifts...).
- The challenge is to get rid of this contamination and ensure a robust redshift measurement
- Evaluate the reliability of the redshift measurement per object
- Do all this automatically for ~ 50 million objects



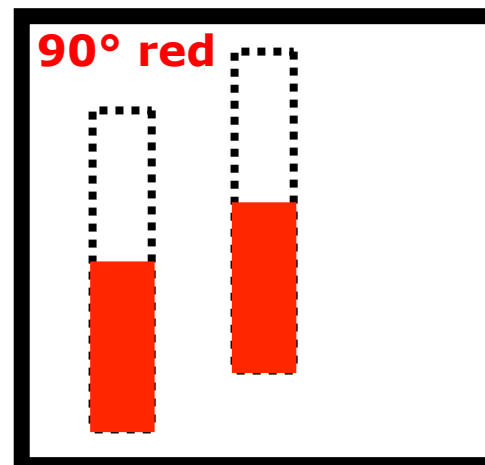
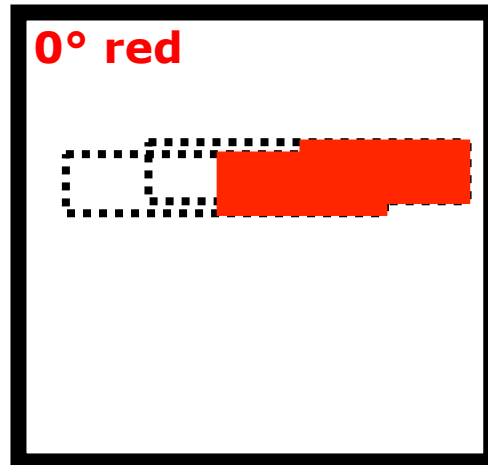
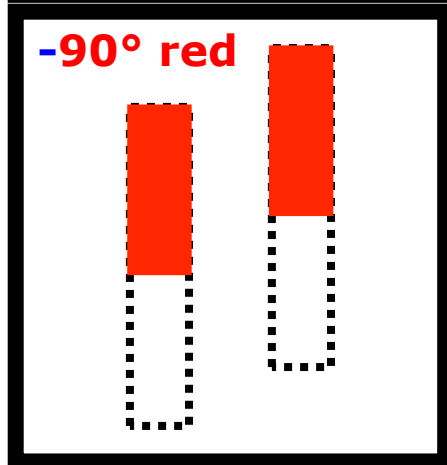


GLASS survey: HST grism

2D spectra from the Wide



Recovering spectra from confusion:
OU-SIR -> OU-SPE

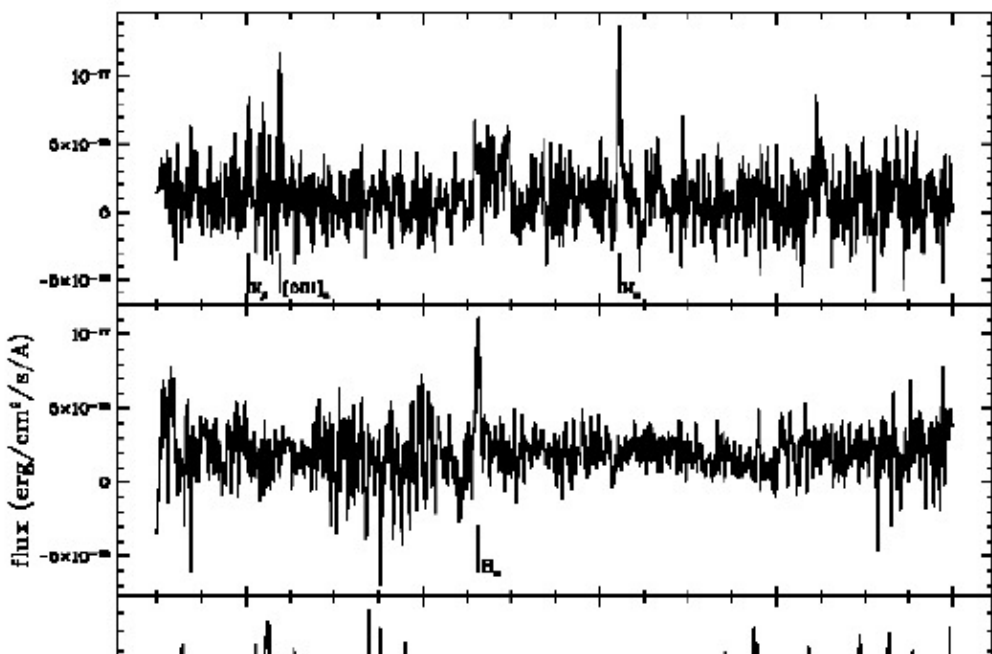


- 4** sub-integrations (dithers)
 - 3** roll angles of the dispersion axis (-90°, 0°, 90°)
 - 1** spectral range (red grism)
- Sequence : 0° - 90° 0° 90°

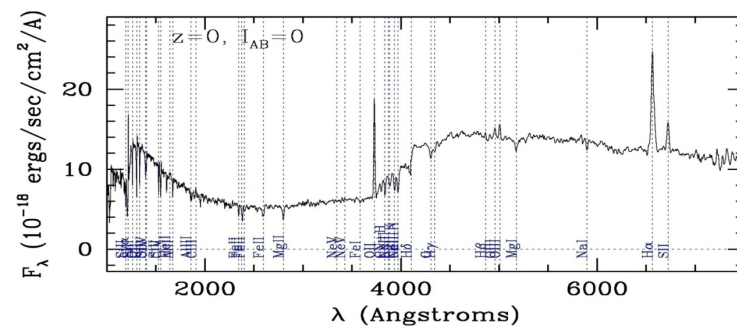
1D spectra: input and redshift engine

Observed

$H\alpha$



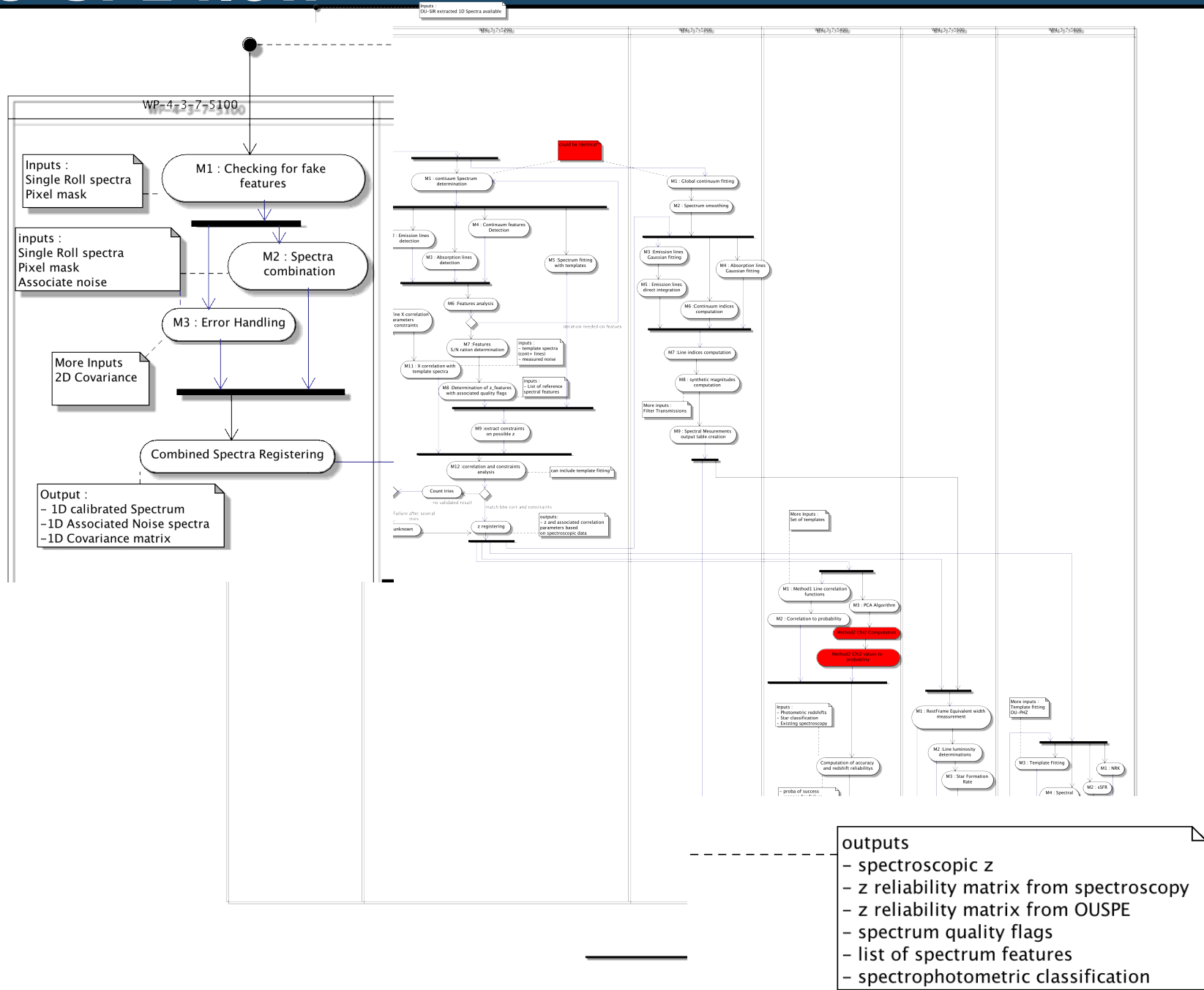
X-correl with templates



Correlation vs. redshift



OU-SPE flow



Key elements

1. Receive clean combined and calibrated spectra from SIR (and associated noise model)
 2. Produce a reference database with template spectra
 3. Identify spectra features: emission and absorption lines, continuum
 4. Cross-correlate observed spectrum with template base
 5. Spectroscopic redshift measurement
 - From spectral features
 - From cross-correlation
 - Compare and decide
 6. Produce a list of redshifts (e.g. peaks in correlation)
 7. Assign a reliability estimate to the redshift(s)
 - Correlation peak strength
 - Compare to photo-z
 8. Measure spectral features: flux, EW, width
-

OU-SPE responsibilities

Role	Name	Laboratory
Leader	Olivier Le Fèvre	LAM
CoLead	Marco Mignoli	OABO
Integration Validation and Verification Reference Person (IV&V RP) :	B. Garilli -C. Surace	INAF-Milano
Product Assurance / Quality Assurance Reference Person (PA/QA RP):	C. Surace	LAM
Simulation Contact Point	Bianca Garilli	IASF

Work packages

WP Number	WP Name	WP Leader	WP Followers
Wp-4-3-07-1000	OU-SPE Management (3.5 FTE)	O. Le Fevre	M. Mignoli
Wp-4-3-07-2000	OU-SPE Interfaces (0.5 FTE)	C. Surace	N. Apostoliakos
Wp-4-3-07-2100	OU-SPE Interfaces with SDC and System (1 FTE)	C. Surace	
Wp-4-3-07-2200	OU-SPE interfaces with Ous (0.5 FTE)	M. Scodiggio	
Wp-4-3-07-3000	OU-SPE Requirements, Performance, Validation (1.7 FTE)	B. Garilli	W. Percival, L. Samushia, P. Norberg
Wp-4-3-07-4000	OU-SPE Data Management (0.5 FTE)	C. Surace	
Wp-4-3-07-4100	OU-SPE Data Model (0.5 FTE)	C. Surace	
Wp-4-3-07-4200	OU-SPE Data Calibration (0.7 FTE)	M. Scodiggio	E. Palazzi, E. Maiorano
Wp-4-3-07-4300	OU-SPE Quality Mask (0.7 FTE)	C. Surace	T. Contini, L. Tresse
Wp-4-3-07-5000	OU-SPE Algorithms Management (2 FTE)	O. Le Fevre	
Wp-4-3-07-5100	Spectra Combination (5 FTE)	O. Le Fevre / E. Rossetti	W. Percival, L. Samushia, B. Millard, D. Vibert, L. Tasca, M. Mignoli, Y. Copin, C. Scarlata
Wp-4-3-07-5200	Lines Identification and Redshift Measurement (8 FTE) (Uses the Agile management method)	O. Le Fevre	D. Vergani, M. Mignoli, A. Cimatti, E. Rossetti, G. Zamorani, E. Vanzella, D. Machado, C. Adami, C. Scarlata
Wp-4-3-07-5300	Spectral Features Measurement (3 FTE)	M. Mignoli	E. Palazzi, D. Vergani, E. Rossetti, P. Ciliegi, A. Cimatti, L. Pozzetti, M. Moresco, G. Cresci, T. Contini, L. Tasca, C. Scarlata, E. Maiorano
Wp-4-3-07-5400	Redshift Quality Determination (3 FTE)	B. Garilli	M. Fumana, L. Tresse, L. Tasca, C. Adami, P. Norberg, M. Mignoli, G. Zamorani, C. Scarlata, V. Le Brun
Wp-4-3-07-5500	Rest-frame Parameters (1.5 FTE)	P. Ciliegi	T. Contini, L. Pozzetti, M. Moresco
Wp-4-3-07-5600	Spectro-photometric Classification (1.5 FTE)	O. Ilbert	D. Vergani, L. Pozzetti, C. Adami,
Wp-4-3-07-5700	R&D Global decontamination and redshift measurement	D. Vibert	
Wp-4-3-07-6000	OU-SPE Infrastructure (0.75 FTE)	T. Fenouillet	

Working with Agile: Sprint plan

The screenshot shows a Jira Agile Sprint Plan board for 'Sprint 2 - In progress' (01/04/2014 -> 25/04/2014) with 0/70 points remaining. The board is divided into columns: Story, Urgent tasks, Todo, In progress, and Done. The 'In progress' column contains several tasks, including 'integrate flow do...', 'create a flow dow...', 'run test bed', 'create fake modul...', 'Risk Analysis_1', 'validation of mod...', 'Method 2: define ...', 'List modules_1', 'I/O definition_1', and 'Validate and make...'. The 'Done' column contains tasks like 'Make available th...', 'create a Wikipage...', and 'draw flow down of...'. A 'Product Backlog' sidebar on the left lists various tasks with their point values.

Product Backlog

- 45 - 5200 - V0.1 - integrate or dev... (13.00 pts)
- 47 - 5400 - V0.1 - integrate or dev... (5.00 pts)
- 48 - 5500 - V0.1 - integrate or dev... (2.00 pts)
- 49 - 5600 - V0.1 - integrate or dev... (2.00 pts)
- 46 - 5300 - V0.1 - integrate or dev... (5.00 pts)
- 36 - 5100 - V0.1 - integrate or dev... (5.00 pts)
- 12 - write down the Z determination... (5.00 pts)
- 24 - write down the algos to test f... (5.00 pts)
- 9 - Building the Euclid templates (3.00 pts)
- 2 - Galaxy template (5.00 pts)
- 3 - QSO Templates (5.00 pts)
- 4 - Stellar Templates (5.00 pts)
- 5 - Gal with AGN2 (5.00 pts)
- 26 - code a module to show the comp... (5.00 pts)
- 21 - Sprint finalization (1.00 pt)
- 18 - Redshift Decision Algo. (5.00 pts)
- 23 - study the DarthFader approach (5.00 pts)

Sprint plan - Sprint 2 - In progress - [01/04/2014 -> 25/04/2014] - 0 / 70 points - Remaining time: 0

Release: proto V0.1 - Sprint 2

Story	Urgent tasks	Todo	In progress	Done
				279 Make available th... 0.0 Marco Mignoli
				280 create a Wikipage... 0.0 christian Surace
58 integrate flow do... As a system I want to integrate the fake modules ... 8 In progress	243 create a flow dow... ?		244 run test bed ? christian Surace 242 create fake modul... ? christian Surace	275 draw flow down of... 0.0 christian Surace
53 5400 - v0.1 Desc... Make a complete list of modules from the list of m... 3 In progress	222 Risk Analysis_1 ?	224 validation of mod... ?	271 Method 2: define ... ? Marco Fumana	
56 5700- Update WP d... for each WP - describe the core function of WP ... 3 In progress	198 List modules_1 ?	202 I/O definition_1 ?	204 Validate and make... ?	

Working with Agile: Roadmap

Release 1 :...	Release2 : ...	Release 3 :...
QUEUE	QUEUE	QUEUE
Check requirements <i>UNASSIGNED</i> #1	Obtain the needed simulations <i>UNASSIGNED</i> #7	Compliance with requirements <i>UNASSIGNED</i> #13
Identify and describe tests needed for each req <i>UNASSIGNED</i> #2	Develop prototype pipeline (5100-5200-5400) <i>UNASSIGNED</i> #8	Produce SRR documents <i>UNASSIGNED</i> #12
Identify modules in prototype for SRR <i>UNASSIGNED</i> #3	Develop prototype pipeline (5300-5500-5600) <i>UNASSIGNED</i> #14	
Identify output quantities and associated statistics <i>UNASSIGNED</i> #4	demonstrate feasibility of bayesian approach (5700) <i>UNASSIGNED</i> #16	
Identify and define simulated data to enter prototype <i>UNASSIGNED</i> #5	Run pipeline and test results <i>UNASSIGNED</i> #10	
Update WP definition, content and expertise <i>UNASSIGNED</i> #6	Describe interfaces <i>UNASSIGNED</i> #9	
Define methods for OU-SPE mask <i>UNASSIGNED</i> #15	Data model <i>UNASSIGNED</i> #11	

Documents / reviews

Docs required for SRR:

- Requirements Specifications Document
- Development plan
- Etc.

Next step: prototyping
