5.9 Milano Team (MIL)

Team Leader	Bianca Garilli
Address	IFCTR-CNR via Bassini 15 20133 Milano, Italy
email	bianca@ifctr.mi.cnr.it
web site	http://cosmos.ifctr.mi.cnr.it

Staff	Name	Degree	Status	%	Work Package
1.	Bianca Garilli	Laurea	staff member	30	1.5, 1.6, 2.1, 2.2, 2.4, 2.5, 2.6, 3.11
2.	Micol Bolzonella	PhD	postdoc	50	1.5, 1.6, 2.4, 2.6, 3.4
3.	Dario Maccagni	Laurea	staff member	30	1.5, 1.6, 3.4, 3.5
4.	Marco Scodeggio	PhD	postdoc	30	1.5, 1.6, 2.4, 2.6
5.	Alessandra Zanichelli	PhD	postdoc	50	1.5, 2.4, 2.5

Local Team description:
The group, which operates within the Istituto di Fisica Cosmica "G. Occhialini" of the Italian National Research Council (CNR), includes astronomers, astronomical software specialists and experimental physicists: a total of 15 research staff members, 10 post-doc and PhD students, plus technical and administrative staff.

The main scientific interests of this group are centered on studying properties of galaxies in different environmental conditions and at different evolutionary states: throughout the years, works have been published on compact groups, bright cluster member properties, statistical analysis of cluster galaxy properties, luminosity functions of clusters of galaxies, field galaxy luminosity function, large scale structure and activity of galaxies. Both photometric (visible and NIR) and spectroscopic observations of extragalactic objects have been routinely carried out for these research topics, using both instruments available on 4m class telescopes and on smaller telescopes, depending on the specific goal. These investigations have often been complemented by observations in the X-ray band, since high energy astrophysics is the other soul of the Institute.

These programmes have required us to master data reduction and analysis tools, and when the VIRMOS Consortium was set up, the Instrument and Data Reduction Software responsibility was assigned to group members. Within the VIRMOS consortium we have gained valuable experience in 3D instruments (the VIMOS IFU and the NIRMOS IFU) and in management of large technical collaborations: five different institutes participate in the development of the software, the coordination of which has been successfully carried out from our group. We have also totally designed and developed in-house the reduction software for the 3D units within VIMOS and NIRMOS. Within the VIRMOS activities, the Milan group was also in charge of designing and providing a machine for MOS mask fabrication.

The team has been part of the ESP-Slice redshift survey and of the EIS public survey. Currently, we have the leadership of the XMDS (X-ray Medium Deep Survey) with XMM-Newton; and are responsible for the NIR survey within the VVDS (VLT VIRMOS Deep Survey). We are currently collaborating with the Marseille group for the VIRMOS survey, and with ESO for other scientific projects. Within these collaborations, several observing programmes have already been approved by the ESO OPC, involving the use of Integral Field Units.

The institute closely collaborates with the University of Milan in giving lectures, courses and training graduate and PhD students.

Significant recent publications:
Scodeggio, M., Zanichelli, A., Garilli, B., Le Fèvre, O., Vettolani, G., 2000 "*Automated spectral extraction for high multiplexing MOS and IFU observations*", in "ADASS X Conference Proceedings", Boston, USA, November 2000

Scodeggio, M. et al. 1999 "*ESO Imaging Survey VII. Distant Cluster Candidates over 12 square degrees*", A&A Suppl. 137, 83

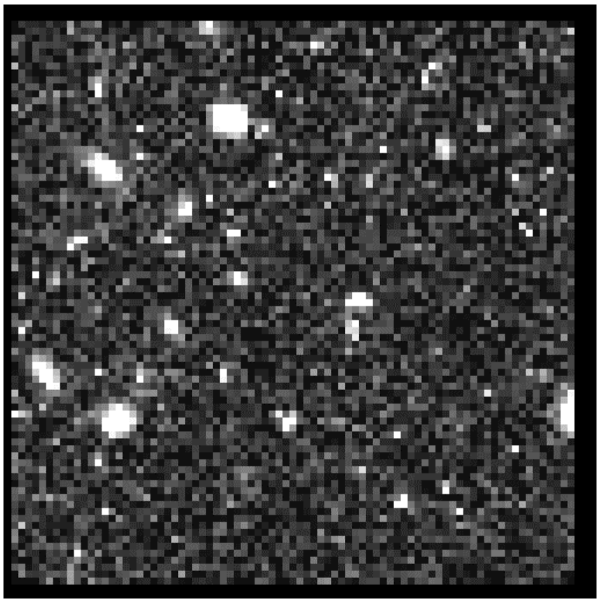

Fig 1: HDF South as will be seen through VIMOS IFU. FOV is 54x54 arcsec (80x80 fibers). Each pixel corresponds to a fiber. Dispersed spectra fall on 4 2kx4k CCDs

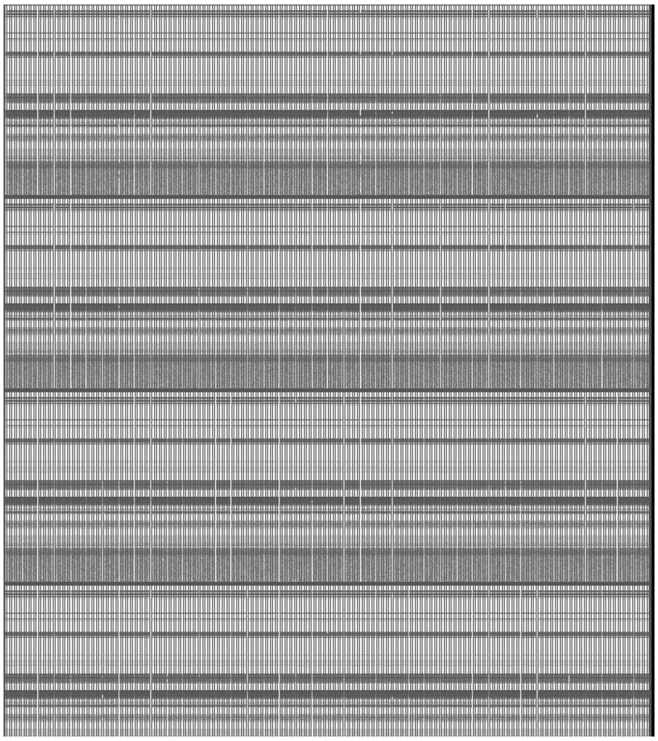

Fig 2: Simulation of VIMOS IFU images:one Vimos quadrant (1600 spectra) is shown.Spectra are simulated as if observed with a Low Resolution Red Grism. Exosure time is one hour.

Fig. 3: one of the spectra of Fig. 2 as reduced with Vimos Ifu reduction pipeline. The object apparent magnitude is about m_I=24, at a redshift of 0.43. OII, H_β and OIII lines are visible.