

Biography and Education

July 1978: High School Degree, Liceo Classico

December 1977: Proficiency Certificate, Cambridge University

September 1979: Diplome de Maitrise du francais escrit et oral, Centre Culturel Francais

November 1981: Zertifikat Deutsch als Fremdsprache, Goethe Institut

November 1983: Master Degree in Physics

Employment History

April 1985-December 1989: Tenure track c/o Istituto di Fisica Cosmica, CNR, Milano

January 1990-December 2001: Staff researcher c/o INAF, IASF Milano (formerly Istituto di Fisica Cosmica, CNR, Milano)

January 2002-present: Associate researcher c/o INAF, IASF Milano (formerly Istituto di Fisica Cosmica, CNR, Milano)

November 1984, October 1985, July 1986: Guest researcher c/o CfA, High Energy Division, Cambridge, USA

May 1992-August 1992; May 1993-September 1993 : Visitor scientist c/o ESO

Current research interests

In these last five years, I focused my research activity on the exploitation of the spectroscopic surveys VVDS (Deep, Wide and UltraDeep), zCosmos and VIPERS. Having participated to the construction of the VIMOS spectrograph (with which all these surveys are carried out) since its earliest days, I have an excellent knowledge of its capabilities and its weaknesses. This allows me to provide an unvaluable contribution to all these projects by evaluating data quality, devising survey strategies according to science needs, finding new and better reduction procedures to compensate for instrument flaws.

On the more scientific side, I have worked mainly on the subject of star formation and mass assembly, while keeping an eye also on the most interesting field of the large scale structure as described by baryons. My contributions are more on the side of measuring the fundamental quantities, like mass through SED fitting, SFR from both lines and SED, studying the underlying selection functions of the sample(s) and eventually correcting for them, rather than on the theoretical interpretation of the results.

I am currently co-I of the VIPERS survey, that has the mapping of the spatial distribution of galaxies at $z < 1$ as main scientific goal. During this first year of data acquisition, I have personally taken care of evaluating the outcome of the survey, in terms of data quality and observation quality, of monitoring and checking whether the scientific needs could be met. Using the currently available data release, it is my plan to investigate whether it is possible to extract a sample of active galaxies (namely type II AGN) in order to evaluate the “contamination” of the whole sample by these peculiar objects. I am also planning to search for rare objects, like high redshift SN, using the spectral information as a start.

Past research interests

1983-1987: X-ray emission from AGN and BL Lac objects

1987-1992: optical morphology of *medium distance* X-ray and optically selected clusters of galaxies ($0.05 < z < 0.3$)

1987-1992: SFR of local galaxies: relations with morphology and environment

1993-1999: optical counts and luminosity function of NIR field galaxies

1990-1999: luminosity function of cluster galaxies

Current technological activities

Software development, and particularly development of data reduction and analysis programs and systems, has always occupied much of my time. In the last ten years, being scientifically interested in cosmological surveys, the need for powerful, reliable, fast and easy to use software has become a must for the scientific exploitation of the projects I'm involved in. This has lead me to be involved more and more in the world of Informatics.

Currently, I coordinate a group of 6 people working (at least 50% of their time) on several aspects of “astronomical software”. We have set up and currently run the “data reduction center” for the Vipers project. This has implied the development of an “omni comprehensive” environment allowing not only to reduce the data and validate them,

but also to monitor the survey progress, in terms of observations, data reduction and redshift measurement, and to organize validated data in a data base accessible by the team.

In parallel, we are also setting up the LUCIFER reduction center: all spectroscopic data acquired by LUCIFER@LBT during the Italian time will be reduced by us and distributed to the PIs.

Together with the spectroscopic tools we have developed and keep on developing, all these activities naturally lead us to participate to the Opticon 3.6 working group. This is an activity financed by the EU in the FP6 framework, continued in FP7, to define and validate via prototyping the architecture and interfaces required for an “astronomical software environment”. The main aim of such an environment is to allow astronomers to use in a homogeneous way several different software packages and programs, to allow direct interactions between such packages and to allow an easy access to the new infrastructures like parallel processing and the GRID environment.

Past technological activities

1982-1985: EXOSAT Data reduction software

1985-1995: Software for reduction and analysis of optical and NIR Data (surface photometry)

1995-2003: Software responsible for the VIMOS spectrograph

2003-2006 VIMOS Data reduction software

2001-2007 3D Visualization tools and 3D spectroscopy analysis tools

2005-2007 Virtual Observatory

Total number of papers and ADS citations

141 refereed papers + 82 non refereed papers + 60 project reports

3588 citations to refereed papers + 203 citations to non refereed papers

Appointments in international projects/boards

1996-1999: Member of the S.Pedro Martir Telescope (Mexico) TAC

September 1995-July 2003: Instrument Software Technical Manager for the VLT-VIMOS instrument

December 2000-January 2002: Italian member of the OPTICON Working Group: Euro3D Data format

July 2002-July 2005: National coordinator for the EU founded project “Euro 3D”, and coordinator of the “software Developmnet” WP within the same project

February 2002-November 2003 : Instrument Scientist and Astronomical Software Technical Manager for VLT-KMOS instrument, Phase A

May 2004 : Italian representative in the OPTICON Working Group 3.6 “Future Data Analysis Environment”

January 2009-December 2010 : Italian representative in the OPTICON working group 9.2 “Future Data Analysis Environment”

October 2008- March 2010: Instrument Scientist and Astronomical Software Technical Manager for ELT OPTIMOS-DIORAMAS spectrograph, Phase A

May 2007 Co-I of the proposal “SPACE” (ESA Cosmic Vision)

october 1007-June 2010 responsible for spectroscopic simulations within the Euclid-NIS consortium

Appointments in national boards

April 1985-May 2003: Responsible for the computer facilities at IASF-Milano

1995-1998 Local Coordinator of the National Project “AVO: Astronomical Virtual Observatory”

September 2001-November 2003: Local Coordinator of the UE founded Project “CosmoLab”

June 2002 - July 2003: Member of the technical-scientific board for INAF projects department

December 2002-February 2003: National coordinator of the INAF working group “Databases and Data Reduction software”

May 2004-December 2007 : Member of the INAF Working Group “Network, Computing and archives”

February 2004- December 2004: Member of the board of consultants to INAF president

December 2003-today : Responsible for the VIMOS Data Reduction Support Center

May 2004-December 2007 : INAF responsible for the “Astronomical Software” project

Teaching

1993-1994: Laboratory classes c/o University of Milan, Department of Physics, “Laboratorio di Fisica II”, 4th year.
1994-1995: Laboratory classes c/o University of Milan, Department of Physics, “Laboratorio di Fisica II”, 4th year.
May 1995: Lessons to PhD students on “Observational properties of cluster of galaxies” c/o University of Milan
1986-today: Thesis tutor for about 15 students, University of Milan, Department of Physics and Department of Mathematics

Public Outreach

1990: Lessons on “astronomy” c/o “De Rossi” primary school
1992: Lessons on “astronomy” c/o “Mac Mahon” primary school
1997: Lessons on “astronomy” c/o “Leonardo da Vinci” primary school
2008: Lessons on “astronomy” c/o “Rozzano” primary school
2010: public conference “Messaggere di Urania: l’Universo tecnologico” c/o Civico Planetario di Milano