

Luigi Guzzo

Curriculum Vitae

OCTOBER 2017

DATE OF BIRTH 21st May 1962, Turin, Italy
NATIONALITY Italian

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PROFESSIONAL HISTORY

- (Sep 2016-) *Full Professor*, Università degli Studi di Milano
- (2012-2017) *ERC Advanced Grantee*
- (2009-2016) *Adjunct Professor (Professore a Contratto)*, Università di Milano-Bicocca
- (2003-2016) *Astronomer (Astronomo Associato, tenured)*, INAF – OA Brera, Merate/Milano
- (1988-2003) *Research Astronomer (Ricercatore Astronomo, tenured)*, Osservatorio Astronomico di Brera, Merate/Milano
- (1988-2001) *Unpaid lecturer (Astrophys. Lab / Extragalactic Astronomy)*, Univ. di Milano
- (1986-1988) *Postdoctoral Fellow*, ESO, Garching, D
- (1985-1986) *ESO Studentship*, ESO, Garching, D

EDUCATIONAL HISTORY

- (1986) Doctoral Laurea: Astronomy, *Summa cum Laude*, Università di Padova, Italy
- (1985-1986) ESO Student
- (1981-1986) University of Padua

CURRENT RESEARCH

Cosmology: – large galaxy redshift surveys; – galaxy clustering: measurement, modelling and theoretical interpretation; – cosmological parameters; – galaxy evolution

- (2012-2017) **Darklight** ERC Project: “*Illuminating dark energy with the next generation of cosmological redshift surveys*”. Created a group involving, along the five years, more than ten young researchers to develop, test, and apply advanced models of galaxy clustering to state-of-the art redshift survey data
- (2007-) **Euclid** dark energy mission: founder member (core member of “SPACE” forerunner Cosmic Vision proposal); currently Euclid Consortium Science Coordination Group co-Chair and coordinator of galaxy clustering SWG, with responsibility in the verification of the primary science requirements
- (2007-) **VIMOS Public Extragalactic Redshift Survey (VIPERS)**: Founder and P.I.; 90,000 galaxy redshifts at $0.5 < z < 1.2$ with the ESO VLT, reaching unprecedented volume and density for this cosmic epoch; unique combination of galaxy clustering and physical properties, with statistical precision comparable to $z \sim 0$ data. First measurement of the power spectrum of the galaxy distribution at $z \sim 1$

PREVIOUS PROJECTS

- (2004-2008) **COSMOS** (member, coordinator of clustering WG): structure vs morphological types & physical properties to $z \sim 1$; then the largest-area HST survey
- (2000-2008) **VIMOS-VLT Deep Survey (VVDS)** (co-founder, coordinator of clustering WG): galaxy evolution & large-scale structure to $z \sim 4$; then the largest deep ($i < 24$) redshift survey
- (1992-2002) **REFLEX** (founder and co-P.I., with H. Boehringer): cosmology with galaxy clusters, cluster abundance & clustering; largest and most statistically complete cluster sample with measured distances drawn from the ROSAT All-Sky Survey
- (1990-1995) **ESO Slice Project (ESP)**, founder): galaxy luminosity function and clustering at $z \sim 0.1$; first major galaxy redshift survey at ESO
- (1988-1992) **EDCC survey** (co-founder and P.I. of redshift follow-up, with C.A. Collins): first survey of automatically selected clusters (together with the APM one), test of standard CDM through the cluster-cluster correlation function

VISITING POSITIONS

- (2015) Laboratoire d'Astronomie de Marseille, F (1 month)
- (2006-2007) MPA/MPE & European Southern Observatory, Garching, D (14 months)
- (2000) Laboratoire d'Astronomie de Marseille, F (1 month)
- (1996) Princeton University & Institute for Advanced Study, Princeton, USA (3 months)
- (1989) European Southern Observatory, Garching, D (1 month)
- (1987-1992) Royal Observatory Edinburgh, UK (3 months total)

POSITIONS OF RESPONSIBILITY (NON-TEACHING, SINCE 2001)

- (2017) Chair, ERC PE9 Starting Grant Evaluation Panel
- (2017) SOC/LOC, workshop on "Getting ready for science. Euclid Galaxy Clustering under Science Performance Review", Sesto Pusteria, 3-8 July 2017
- (2010-) External reviewer for grant proposals of the "Agence Nationale de la Recherche" (ANR, France) and the "Deutsches Forschungsgemeinschaft" (DFR, Germany)
- (2016) External reviewer for Irish Research Council postgraduate program
- (2016) ESO Working Group on the Future of Multi-Object Spectroscopy (chair R.S. Ellis)
- (2016) SOC/LOC, workshop on "Theoretical Challenges for Precision Galaxy Clustering", Sesto Pusteria, 11-15 July 2016
- (2016) SOC/LOC (Chair), "Darklight" workshop on "BAO & RSD: Dark-light on Obscure Acronyms", Sesto Pusteria, 4-8 July 2016
- (2015) Chair, ERC PE9 Starting Grant Evaluation Panel
- (2015) S.O.C., ESO/MPE/MPA Joint Symp. "Theoretical and Observational Progress on Large-scale Structure of the Universe", ESO Garching, July 20-24 2015
- (2014) S.O.C., "Beyond Cosmology" conference, held in Oslo, 14-17 January 2015
- (2014) ESO-4MOST Cosmology Task Force (Chair: R. McMahon)
- (2014) Chair, S.O.C./L.O.C, "Darklight" workshop "Measuring and Modelling Redshift-Space Distortions", held in Sesto Pusteria, 20-25 July 2014
- (2014-) Euclid Consortium Publication Group
- (2013) Member, ERC PE9 Consolidator Grant Evaluation Panel
- (2011) Member of Committee for H.J. Mc Cracken "Soutenance" (IAP, Paris)

- (2009) Convenor of “LSS and Cosmology” panel, INAF 2009-2012 Strategic Plan
- (2008) NASA-DOE JDEM “Figure-of-Merit” Science Working Group (FoMSWG, chair R. Kolb)
- (2008-2009) Science Team coordinator, NIS spectrograph payload, ESA EUCLID project
- (2008-2009) ESA *EUCLID* Cosmology Working Group
- (2007-2008) Steering committee, *SPACE* satellite project
- (2005-2010) Science Steering Committee, COSMOS project
- (2005) INAF President special advisory board
- (2005) Mid-term reviewer, French-Canadian CFHT Legacy Survey (CFHT-LS)
- (2002-2004) Time Allocation Committee, Galileo National Telescope (TNG)
- (2001-2004) Working Group for Surveys, European Southern Observatory
- (2001-) Reviewer of job promotions for universities and research institutes in UK, Germany, France and USA

UNIVERSITY COURSES

- (2017-2018) “Waves & Oscillations” (Bachelor Degree, 62 hrs/yr, Univ. of Milano)
- (2017-2018) “Cosmology II” (Master Degree, 42 hrs/yr, Univ. of Milano)
- (2011-2016) “Cosmology II” (Master Degree, 48 hrs/yr, Univ. Milano-Bicocca)
- (2010-2011) “Relativistic Cosmology” (Master Degree, 64 hrs/yr, Univ. Milano-Bicocca)
- (2009-2010) “Observational Cosmology”, (Master Degree, 64 hrs/yr, Univ. Milano-Bicocca)
- (1996-2001) “Extragalactic Astronomy” (Undergraduate, avg. 10 hrs/yr, Univ. of Milano, unpaid lecturer, chair G. Chincarini)
- (1995) Coordinator, Graduate Course “Galaxies and Cosmology” (Univ. of Milano)
- (1988-1992) “Introduction to Spectroscopy and CCD data reduction” (Undergraduate Experimental Physics Lab, 20 hrs/yr, unpaid lecturer, course chair G. Boella)

STUDENT SUPERVISION

- (2014-2017) PhD thesis A. Pezzotta (Univ. of Milano-Bicocca, “Multiple population tracers of clustering and redshift-space distortions”)
- (2013-2016) PhD thesis F. Mohammad (Univ. of Insubria, “Optimizing redshift-space distortions estimators and application to the VIPERS survey”)
- (2011-2014) PhD thesis S. Rota (Univ. of Insubria: “The galaxy power spectrum from the VIPERS survey”)
- (2010-2013) PhD thesis D. Bianchi (Univ. of Milano: “Precise and Accurate Measurements of Cosmological Parameters from Galaxy Clustering and Motions”)
- (2009-2014) PhD thesis A. Marchetti (Univ. of Milano, “Cosmological constraints from LSS and CMB”)
- (2004-2006) PhD thesis P. Cassata (co-supervisor, Università di Padova)
- (1992-1995) PhD thesis Sabrina De Grandi (co-advisor, “The RASS Bright Cluster Sample”)
- (1988-) Supervisor of more than 30 Master theses (~1 year original research work)

UNIVERSITY COMMITTEES (SINCE 2001)

- (2001-) External examiner for >20 PhD theses at several Universities, including Bologna, Padua, Marseille, Paris, Western Australia (plus of course all universities of the Milan area)

- (2015-2016) Council, Grad. School in Phys., Univ. of Milano-Bicocca
- (2014) Selection Committee, PhD School in Physics, Astrophysics and Applied Physics, University of Milano
- (2012) Selection Committee, PhD School in Astronomy, University of Padova
- (2006-2014) Council, Grad. School in Phys. & Astronomy, Univ. of Insubria (Como)
- (2001-) PhD Examiner at Marseille and Paris Universities (Adami, Foucaud, Meneux, De La Torre, Coupon, Bel, Comparat, Pisani, Durkalec)

PUBLICATION HIGHLIGHTS

- **205 refereed papers; ~17,000 overall citations; 46 papers** with at least **100 citations; h-index=69** (source for all bibliographical data: ADS, <http://adsabs.harvard.edu>, updated October 2017); full paper list available at http://adsabs.harvard.edu/abstract_service.html/&author=Guzzo%2C+L
- Commentaries: **Nature “News & Views”** (Coles, P., 1997, vol. 391, 120; Strauss, M.S., 2008, vol. 451, p.531); **New Scientist** (Ferreira, P., 2010, vol. 2781, 46).

CO-SIGNED REPORTS OF INTERNATIONAL PANELS

- Ellis, R., et al., 2017, **“The Future of Multi-Object Spectroscopy: a ESO Working Group Report”**, (arXiv 1701.01976)
- Laureijs, R., et al., 2011, **“Euclid Definition Study Report”** (the Euclid “Red Book”), (arXiv 1110.3193).
- Albrecht, A., et al. (the JDEM FoM Survey Working Group), 2009, **“Findings of the Joint Dark Energy Mission Figure of Merit Science Working Group”**, a study report to NASA and the Department of Energy of the U.S. Government (arXiv 0901.0721).
- Laureijs, R., et al. (Euclid Science Study Team), 2009, **“Euclid Assessment Study Report for the ESA Cosmic Vision”** (the Euclid “Yellow Book”), report submitted to ESA in September 2009.

INVITED TALKS/LECTURES AT INTERNATIONAL MEETINGS (PAST THREE YEARS)

- **“Simulation needs for the Euclid galaxy clustering experiment”** invited talk at Simulated Skies for next-generation spectroscopic surveys, European Space Astronomy Center, ESA, Madrid (E), March 2018
- **“Towards unbiased measurements of the growth rate of structure: lessons from VIPERS”** invited review at The Dark Universe 2017, international conference of the Transeglobal Research Centre TRR33, Munich (D), October 2017
- **“Cosmological results at $z \sim 1$ from the completed VIPERS galaxy survey”** invited review at Progress in Old and New Themes in Cosmology (PONT) 2017, Avignon (F), April 2017
- **“Cosmic Acceleration: New Results and Perspectives from Galaxy Surveys”**, invited review at XVI International Workshop on Neutrino Telescopes, Venice (I), February 2017
- **“The VIPERS survey at the ESO VLT”**, invited review at Panoramas of the Evolving Cosmos, VI Subaru International Conference, Hiroshima (J), November 2016
- **“Clustering with Large Redshift Surveys: the Road to Euclid”**, invited lecture series (3 lectures) at PhD School of Astrophysics “Francesco Lucchin”, Napoli (I), May 2016
- **“Cosmology with Galaxy Surveys: Understanding the Dark Universe”**, invited key-note lecture at Joint ESA-ERC Networking Event on Frontiers of Space Science and Technology,

ESA/ESTEC Noordwijk (NL), November 2015

- “*VIPERS: an Unprecedented View of Galaxies and Large-Scale Structure at $z \sim 1$* ”, invited review at Rainbows on the Southern Sky: Science and Legacy Value of the ESO Public Surveys and Large Programmes, Garching (D), October 2015
- “*VIPERS: a Combined View of Galaxies and Large-Scale Structure at $z \sim 1$* ”, invited review at Science with Multi-Object Spectroscopy: towards the ELT Era, Cefalu’ (I), September 2015
- “*The VIPERS Survey*”, invited review at Drifting Through the Cosmic Web: the Evolution of Galaxies within Large-Scale Structure, Aix-en-Provence (F), July 2015 (delivered by M. Bolzonella)
- “*Which Redshift Surveys for Cosmology. New data, new challenges*”, invited review at Alternative Gravity and Alternative Matter, Heraklion (GR), May 2015
- “*Cosmology with Galaxy Redshift Surveys*”, invited talk at LIX Congresso della Società Astronomica Italiana, Catania, May 2015
- “*Cosmology with Galaxy Redshift Surveys: new data, new challenges*”, invited talk at Advanced Workshop on Cosmological Structures from Reionization to Galaxies: combining efforts from analytical and numerical methods, ICTP Trieste, May 2015
- “*Euclid*”, invited talk at Multi-Object Spectroscopy in the Next Decade: Big Questions, Large Surveys and Wide Fields, Santa Cruz de la Palma, Spain, March 2015 (declined)
- “*Galaxy Clustering: More Data, More Challenges*”, invited talk at 2nd Ringberg Meeting on Dark Energy ‘The Quest for Dark Energy II: Theory and Simulations Confront Observations’, Ringberg Castle, Germany, December 2014
- “*Cosmology with Galaxy Redshift Surveys*”, invited review talk at 100th Meeting of the Italian Physical Society (SIF), Pisa, September 2014
- “*Large-scale structure and Voids in the VIPERS survey*”, invited talk at Cosmic Voids in the Next Generation of Galaxy Surveys, Ohio State University, Columbus, USA, August 2014
- “*Cosmology with Galaxy Redshift Surveys*”, invited topical talk at Frontiers of Fundamental Physics (FFP14), Marseille, France, July 2014
- “*Large-scale structure from VIPERS*”, invited talk at the workshop Unsolved Problems in Astrophysics and Cosmology, Budapest, Hungary, June/July 2014
- “*Large-scale structure at high redshifts*”, invited review talk at the IAU Symposium 308 ‘The Zel’dovic Universe: Genesis and Growth of the Cosmic Web’, Tallinn, Estonia, June 2014
- “*The DARKLIGHT project*”, invited talk at 58th Congress of the Italian Astronomical Society (SAIt), Milan, May 2014
- “*VIPERS: an Unprecedented View of Large-Scale Structure and Galaxy Properties at $0.5 < z < 1.2$* ”, invited talk at Rencontres de Moriond 2014, La Thuile, Italy, March 2014