

Maurizio Paolillo - Curriculum Vitae

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Present position and duties:

- Assistant Professor at the Department of Physical Sciences of the University "Federico II" of Naples
- Senior Scientist of the Italian Space Agency
- Associated to the Italian National Institute for Astrophysics (INAF)
- Associated to the Italian National Institute for Nuclear Physics (INFN)

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Born: April 27, 1972

Other duties:

- Local P.I. of the Naples Unit for the Project "A high energy view of galaxies and groups the local Universe" approved and supported by the Italian Space Agency (2010)
- In charge of the Naples Unit for the Project "Wide Field X-ray Telescope" approved and supported by the Italian Space Agency (2009)
- Director of the Naples section of the Italian University Network for Astronomy and Astrophysics (RIAA)

Education:

- Ph.D. in Physics at the Palermo University, D.S.F.A. and Palermo Astronomical Observatory, in 2002. Dissertation: "X-ray emission from Early-Type galaxies in poor clusters and groups". Supervisor: Prof.G.Peres
- Degree in Physics (Astrophysics) *summa cum laude* in 1998 at the Naples University Federico II. Dissertation: "La Funzione di Luminosita' di ammassi di galassie a basso redshift" (supervisors Prof. M.Capaccioli and Prof. G.Longo) prepared at the Osservatorio Astronomico di Capodimonte within the CRoNaRio project.
- High School Diploma in 1991.

Work Experience:

- *October 2002-August 2004:* post-doc fellow at the Space Telescope Science Institute, Baltimore, MD (USA), working on the X-ray/optical study of astronomical sources detected deep multiband surveys with Prof. E. Schreier and Prof. R. Giacconi

- *November 2001-October 2002*: scientific contractor at the Capodimonte Observatory within the project "Study of large databases: a new approach toward the automatic search and classification of normal, rare or peculiar objects. "
- *February - March 2001*: 2 months Fellowship at the High Energy Division of the Harvard-Smithsonian Astrophysical Observatory - Cambridge (MA, USA) in , to study of the X-ray emission from Early-Type galaxies in Groups and clusters of galaxies.
- *October 1999-October 2000*: 2 stages at the Harvard-Smithsonian Center for Astrophysics (MA, USA), to work with **Dr. G. Fabbiano** and **Dr. K. Dong-Woo** of the High Energy Division, at the study of the X-ray Emission of Early-Type galaxies
- *1998-2001*: member of the CRoNaRio project at Capodimonte Observatory in Naples (Italy), for the reduction and analysis of the Digitized Palomar Second Sky Survey plates.

Scientific commettees:

- The "Wide Field X-ray Telescope workshop" - Bologna, 25-26 Novembre 2009
- "I° WORKSHOP DI ASTRONOMIA ED ASTROFISICA PER STUDENTI"- Napoli, 19-20 aprile 2006
- "National School of Astrophysics" - VIII Cycle (2005-2006), I Course: 8-13 May 2005, S.Agata sui dui Golfi, Naples, Italy

Teaching activity:

- High Energy Astrophysics Class, CL in Physics (AA 2005/06, until now)
- "Physics and Informatics", CL in Biological Sciences (from AA 2004/05 until now)
- Supervisor of about 20 Bachelor and Master thesis at the Naples University, from AA 2004/05 until now

Outreach activities:

- 2010: "Astri e Particelle" - Exhibit of the National Institute for Nuclear Physics on the experiments for the study of the Universe.
- 2008-2009: "Space CAR" - The first Italian itinerant Observatory
- 2005-2011: "Fisica in Barca" - Local coordinator of "the Physics of sailing" for High School students, event organized by the INFN
- 2005: "Exposcuola 2005" - Astronomy and Astrophysics at the University of Naples: exposition and seminars held within the Exposcuola exhibit
- 2005: "Fisica in Barca" - The physics of sailing for high-school students - Organized as part of the INFN outreach activities for the World Year of Physics 2005
- 2004: "Chi Ricerca Trova" - Seminars for high-school and undergraduate students, University of Naples

- 2004: Astronomia e Dintorni - Seminars of Astronomy and Cosmology for undergraduate and PhD students at the Naples Federico II University

Fields of Interest:

- X-ray emission and variability of Active galaxies
- Deep multiband surveys: GOODS project
- X-ray emission of Early-Type galaxies, groups and clusters
- Structure and evolution of stellar systems
- Galaxy clusters: luminosity function, morphological parameters and comparison with cosmological models
- Automatic procedures for astronomical data reduction and data mining
- Direct Dark Matter detection through astrophysical measurements

Informatics:

- Knowledge of Unix, Mac, Dos and Windows systems.
- Proficient in the use of Microsoft Office.
- Programming in IDL, R, Fortran and C-Shell.
- Good knowledge of IRAF and MIDAS astronomical packages
- Parallel programming with PVM and HPF.
- Good knowledge of HTML language and Web sites development.

Foreign languages:

- Good knowledge of English: written and spoken.
6 years of english courses at the British Council.
Several periods of practice in the USA.
- Good knowledge of French: written and spoken.
8 years of french courses at school.
Advanced french course in 1998 at the O.A.C

Publications:

Refereed journals:

1. "The detection of globular clusters in galaxies as a data mining problem" - Brescia, M.; Cavuoti, S.; Paolillo, M.; Longo, G.; Puzia, T. 2011, in press on MNRAS (arXiv1110.2144B)
2. "The Radio - X-ray relation as a star formation indicator: Results from the VLA--E-CDFS Survey" - Vattakunnel, S.; Tozzi, P.; Matteucci, F.; Padovani, P.; Miller, N.; Bonzini, M.; Mainieri, V.; Paolillo, M.; Vincoletto, L.; Brandt, W. N. et al. 2011, in press in MNRAS (arXiv1111.3285V)
3. "X-Ray Spectral Constraints for $z \approx 2$ Massive Galaxies: The Identification of Reflection-dominated Active Galactic Nuclei" - Alexander, D. M.; Bauer, F. E.; Brandt, W. N.; Daddi, E.; Hickox, R. C.; Lehmer, B. D.; Luo, B.; Xue, Y. Q.; Young, M.; Comastri, A. et al. 2011, ApJ 738, 44
4. "Probing the GC-LMXB Connection in NGC 1399: A Wide-field Study with the Hubble Space Telescope and Chandra" - Paolillo, Maurizio; Puzia, Thomas H.; Goudfrooij, Paul; Zepf, Stephen E.; Maccarone, Thomas J.; Kundu, Arunav; Fabbiano, Giuseppina; Angelini, Lorella, 2011, ApJ 736, 90
5. "The luminosity function of the NoSOCS galaxy cluster sample" - de Filippis, E.; Paolillo, M.; Longo, G.; La Barbera, F.; de Carvalho, R. R.; Gal, R. 2011, MNRAS 414, 277
6. "The Chandra Deep Field-South Survey: 4 Ms Source Catalogs" - Xue, Y. Q.; Luo, B.; Brandt, W. N.; Bauer, F. E.; Lehmer, B. D.; Broos, P. S.; Schneider, D. P.; Alexander, D. M.; Brusa, M.; Comastri, A. et al. 2011, ApJS, 195, 10
7. "The XMM Deep survey in the CDF-S. I. First results on heavily obscured AGN" - Comastri, A.; Ranalli, P.; Iwasawa, K.; Vignali, C.; Gilli, R.; Georgantopoulos, I.; Barcons, X.; Brandt, W. N.; Brunner, H.; Brusa, M. 2011, A&A 526L, 9
8. "Probing BH mass and accretion through X-ray variability in the CDFS" - Allevato, V.; Pinto, C.; Paolillo, M.; Papadakis, I.; Ranalli, P.; Comastri, A.; Iwasawa, K. 2010, AIPC 1248, 491
9. "The Wide Field X-ray Telescope Mission-A Digital Sky Survey in X-rays" - Murray, S.; Giacconi, R.; Ptak, A.; Rosati, P.; Weisskopf, M.; Borgani, S.; Jones, C.; Pareschi, G.; Tozzi, P.; Gilli, R., Campana, S., Paolillo, M. et al. 2010, AIPC 1248, 549
10. "Searching for Dark Matter in Messier 33" - Borriello, Enrico; Longo, Giuseppe; Miele, Gennaro; Paolillo, Maurizio; Siffert, Beatriz B.; Tabatabaei, Fatemeh S.; Beck, Rainer 2010, ApJL 709, 32
11. "The properties of the heterogeneous Shakhbazyan groups of galaxies in the SDSS" - Capozzi, D.; de Filippis, E.; Paolillo, M.; D'Abrusco, R.; Longo, G. 2009, MNRAS 396, 900
12. "Gauging the Dark Matter Fraction in an L * S0 Galaxy at $z = 0.47$ Through Gravitational Lensing from Deep Hubble Space Telescope/Advanced Camera for Surveys Imaging" - Covone, G.; Paolillo, M.; Napolitano, N. R.; Capaccioli, M.; Longo, G.; Kneib, J.-P.; Jullo, E.; Richard, J.; Khovanskaya, O.; Szhin, M. et al. 2009, ApJ 691, 531
13. "The Chandra Deep Field-South Survey: 2 Ms Source Catalogs" - Luo, B.; Bauer, F. E.; Brandt, W. N.; Alexander, D. M.; Lehmer, B. D.; Schneider, D. P.; Brusa, M.; Comastri, A.; Fabian, A. C.; Finoguenov, A. et al. 2008, ApJS 179, 19
14. "The dynamical state of RX J1347.5-1145 from a combined strong lensing and X-ray analysis" - Miranda, M.; Sereno, M.; de Filippis, E.; Paolillo, M. 2008, MNRAS 385, 511
15. "Mining the SDSS archive. I. Photometric redshifts in the nearby universe" - D'Abrusco Raffaele, Staiano Antonino, Longo Giuseppe, Brescia Massimo, Paolillo Maurizio, De Filippis Elisabetta, Tagliaferri Roberto, 2007, ApJ, 663, 752

16. "Gravitational lensing by cosmic strings: what we learn from the CSL-1 case" - M.V. Sazhin, O.S. Khovanskaya, M. Capaccioli, G. Longo, M. Paolillo, G. Covone, N.A. Grogin, E.J. Schreier, 2007, MNRAS, 376, 1731
17. "Hickson 62.I. Kinematics of NGC4778" - M. Spavone, E. Iodice, G. Longo, M. Paolillo, S. Sodani, 2006, A&A, 457, 493
18. "Further Spectroscopic Observations of the CSL-1 Object" - M. Sazhin, M. Capaccioli, G. Longo, M. Paolillo, O. Khovanskaya; 2006, ApJL 636, 5
19. "The complex kinematics of galaxies in Hickson 62" - Spavone, M.; Iodice, E.; Longo, G.; Paolillo, M.; 2005, AN, 326, 512
20. "AGN Host Galaxies at $z\sim 0.4-1.3$: Bulge-dominated and Lacking Merger-AGN Connection" - Grogin N. A.; Conselice, C. J.; Chatzichristou, E.; Alexander, D. M.; Bauer, F. E.; Hornschemeier, A. E.; Jogee, S.; Koekemoer, A. M.; Laidler, V. G.; Livio, M.; Lucas, R. A.; Paolillo, M.; Ravindranath, S.; Schreier, E. J.; Simmons, B. D.; Urry, C. M.; 2005, ApJ, 627L, 97
21. "Morphology of low-redshift compact galaxy clusters - I. Shapes and radial profiles" - Strazzullo, V.; Paolillo, M.; Longo, G.; Puddu, E.; Djorgovski, S. G.; De Carvalho, R. R.; Gal, R. R.; 2005, MNRAS, 359, 191
22. "High-Redshift Extremely Red Objects in the Hubble Space Telescope Ultra Deep Field Revealed by the GOODS Infrared Array Camera Observations" - Yan, H.; Dickinson, M.; Eisenhardt, P. R. M.; Ferguson, H. C.; Grogin, Norman A.; Paolillo, M.; Chary, R.-R.; Casertano, S.; Stern, D.; Reach, W. T.; Moustakas, L. A.; Fall, S. M.; 2004, ApJ, 616, 63
23. "Prevalence of X-Ray Variability in the Chandra Deep Field-South" - Paolillo, M.; Schreier, E. J.; Giacconi, R.; Koekemoer, A. M.; Grogin, N. A.; 2004, ApJ, 611, 93
24. "Lower Mass Black Holes in the GOODS? Off-nuclear X-ray Sources" - A.E.Hornschemeier, D.M.Alexander, F.E.Bauer, W.N.Brandt, R.Chary, C.Conselice, N.A.Grogin, A.M.Koekemoer, B.Mobasher, M.Paolillo, S.Ravindranath, E.J.Schreier; ApJL, 600, 147
25. "ROSAT-HRI Investigation of the NGC 507 X-Ray Halo" - M. Paolillo, G. Fabbiano, G. Peres, D.-W. Kim; 2003, ApJ, 586, 850
26. "Deep ROSAT-HRI Observations of the NGC 1399/NGC 1404 Region: Morphology and Structure of the X-Ray Halo" - M. Paolillo, G. Fabbiano, G. Peres, D.-W. Kim; 2002, ApJ, 565, 883
27. "Photometric validation of a model independent procedure to extract galaxy clusters" - E. Puddu, S. Andreon, G. Longo, V. Strazzullo, M. Paolillo, R.R. Gal; 2001, A&A, 379, 426
28. "Luminosity Function of Clusters of Galaxies" - Authors: M. Paolillo, S. Andreon, G. Longo, E. Puddu, R.R. Gal, R. Scaramella, S.G. Djorgovski, R. de Carvalho 2001, A&A, 367, 59

Books:

1. "The Wide Field X-ray Telescope", proceedings of the conference held in Bologna on 25-26 Nov. 2009; eds. Rosati P.; Borgani S.; Gilli R.; Paolillo M.; Tozzi P.; 2011, Mem.SAIT Supp. vol.17
2. "I° WORKSHOP DI ASTRONOMIA ED ASTROFISICA PER STUDENTI"- Napoli, April 19-20 2006, eds. N.R.Napolitano & M.Paolillo, published by INFN- Sez.di Napoli

White papers presented to the NASA 2010 Decadal Survey:

1. "Galaxy clusters and the cosmic cycle of baryons across cosmic times" - Giacconi, R.; Borgani, S.; Rosati, P.; Tozzi, P.; Gilli, R.; Murray, S.; Paolillo, M.; Pareschi, G.; Tagliaferri, G.; Ptak, A.; et al. 2009, astro2010, n.90
2. "The growth and evolution of super massive black holes" - Murray, S.; Gilli, R.; Tozzi, P.; Paolillo, M.; Brandt, N.; Tagliaferri, G.; Vikhlinin, A.; Bautz, M.; Allen, S.; Donahue, M.; et al. 2009, astro2010, 217
3. "X-ray Cluster Cosmology" - Vikhlinin, A.; Murray, S.; Gilli, R.; Tozzi, P.; Paolillo, M.; Brandt, N.; Tagliaferri, G.; Bautz, M.; Allen, S.; Donahue, M.; et al. 2009, astro2010, 217

Other contributions:

1. "Constraints On Sterile Neutrino Dark Matter From XMM-Newton Observations Of M33" - Paolillo, M.; Borriello, E.; Miele, G.; Owen, R.; Longo, G. in "The Second Ferrara Workshop on "X-ray Astrophysics up to 511 keV", held in Ferrara (Italy), September 14 - 16, 2011, article #43. Published online at <http://www.fe.infn.it/astrofe2011>"
2. "Extracting knowledge from massive astronomical data sets"- Brescia, M.; Cavuoti, S.; Djorgovski S.G.; Donalek C.; Longo G.; Paolillo M. 2011, Invited contribution to appear in *Astrostatistics and Data Mining in Large Astronomical Databases*, eds. L.M. Barrosaro et al., Springer Series on Astrostatistics (2011) (arXiv:1109.2840)
3. "X-ray variability with WFXT . AGNs, transients and more" – Paolillo, M.; Pinto, C.; Allevato, V.; de Martino, D.; della Valle, M.; Papadakis, I.; Gilli, R.; Tozzi, P.; WFXT collaboration 2011, *Memorie della Societa Astronomica Italiana Supplement*, v.17, p.97
4. "Demography of obscured and unobscured AGN: prospects for a Wide Field X-ray Telescope" - Gilli, R.; Tozzi, P.; Rosati, P.; Paolillo, M.; Borgani, S.; Brusa, M.; Comastri, A.; Lusso, E.; Marulli, F.; Vignali, C.; WFXT team; 2011, *MSAIS*, 7, 85
5. "Simulating the WFXT sky" - Tozzi, P.; Santos, J.; Yu, H.; Bignamini, A.; Rosati, P.; Borgani, S.; Campana, S.; Conconi, P.; Gilli, R.; Paolillo, M., et al. 2011, *MSAIS*, 17, 24
6. "Wide Field X-ray Telescope: Mission Overview" - Rosati, P.; Borgani, S.; Gilli, R.; Paolillo, M.; Tozzi, P.; Murray, S.; Giacconi, R.; Ptak, A.; Weisskopf, M.; Forman, W., et al. 2011, *MSAIS*, 17, 8
7. "DAME: A Web Oriented Infrastructure for Scientific Data Mining & Exploration" - Massimo Brescia, Giuseppe Longo, George S. Djorgovski, Stefano Cavuoti, Raffaele D'Abrusco, Ciro Donalek, Alessandro Di Guido, Michelangelo Fiore, Mauro Garofalo, Omar Laurino, Ashish Mahabal, Francesco Manna, Alfonso Nocella, Giovanni d'Angelo, Maurizio Paolillo; 2010, *Journal of Scientific Computing* (arXiv: 1010.4843)
8. "X-Ray Variability of High-z AGNs: Results from Deep Surveys and Prospects for Future X-Ray Missions" - Paolillo, Maurizio; Pinto, Ciro; Allevato, Viola; Papadakis, Iosif 2010, *Proceedings of the 38th Cospar Scientific Assembly*, 38, 2275
9. "How many Supermassive Black Holes populate the Early Universe?" - Gilli, Roberto; Vignali, C.; Rosati, P.; Tozzi, P.; Borgani, S.; Paolillo, M.; Murray, S.; Ptak, A.; Forman, B.; Hickox, R.; et al. 2010, *Proceedings of the 38th Cospar Scientific Assembly*, 38, 2361
10. "Wide Field X-ray Telescope: a moderate class mission" - Murray, Stephen S.; Giacconi, R.; Ptak, A.; Rosati, P.; Weisskopf, M.; Borgani, S.; Jones, C.; Pareschi, G.; Tozzi, P.; Gilli, R., Paolillo, M. et al. 2010, *SPIE conference series*, 7732, 58 "An X-ray investigation of Hickson 62"
11. "Probing the GC-LMXB Connection in NGC 1399" - Paolillo, Maurizio; Puzia, Thomas H.; Goudfrooij, Paul; Zepf, Stephen E.; Maccarone, Thomas J.; Kundu, Arunav; Fabbiano, Giuseppina; Angelini, Lorella, 2010, *AIPC*, 1248, 243

12. "X-Ray Variability of High-z AGNs: Results from Deep Surveys and Prospects for Future X-Ray Missions" - Paolillo, Maurizio. 2010 in "Active Galactic Nuclei 9: Black Holes and Revelations" Conference held 24-27 May, 2010 at Alua Magna dell'Universita di Ferrara., p.30
13. "Mining the Structure of the Nearby Universe" - D'Abrusco, R.; Longo, G.; Brescia, M.; de Filippis, E.; Paolillo, M.; Staiano, A.; Tagliaferri, R. 2007, in "Modelling and Simulation in Science: Proceedings of the 6th International Workshop on Data Analysis in Astronomy" held in Erice, Italy. Eds. Vito Di Gesù, Giosuè Lo Bosco, and Maria Concetta Maccarone. The Science and Culture Series -- Astrophysics. Series editor A. Zichichi. Published by World Scientific, New Jersey, USA, 2008, p.125
14. Sodani, S.; de Filippis, E.; Paolillo, M.; Longo, G.; Spavone, M., 2007, 1st Workshop of Astronomy and Astrophysics for Students, 113
15. "The use of neural networks to probe the structure of the nearby universe" - d'Abrusco, R., Longo, G., Paolillo, M., de Filippis, E., Brescia, M., Staiano, A., & Tagliaferri, R. 2007, proceedings of the Astronomical Data Analysis -IV workshop held in Marseille in 2006. J.L. Starck et al. eds
16. "GOODS Optically Variable Galaxy Nuclei and Their Multiwavelength Properties" - Grogin, N. A.; Steffen, A. T.; Brandt, W. N.; Paolillo, M.; Koekemoer, A. M.; Schreier, E. J.; presented to the 2004 American Astronomical Society Meeting 205, #163.08
17. "Examining the Nature of the Optically Variable, X-ray Undetected GOODS Sources" - Steffen, A. T.; Brandt, W. N.; Grogin, N. A.; Koekemoer, A. M.; Paolillo, M.; Schneider, D. P.; Schreier, E. J.; and the GOODS team; presented to the 2004 American Astronomical Society Meeting 205, #62.04
18. "GOODS Evidence for Black Hole-Bulge Correlation and against Merger-AGN Connection at $0.4 < z < 1.3$ " - Grogin, N. A.; Conselice, C. J.; Chatzichristou, E.; Alexander, D. M.; Bauer, F. E.; Hornschemeier, A. E.; Jogee, S.; Koekemoer, A. M.; Laidler, V. G.; Livio, M.; Lucas, R. A.; Paolillo, M.; Ravindranath, S.; Schreier, E. J.; Simmons, B. D.; Urry, C. M.; GOODS Team; presented to the 2003 American Astronomical Society Meeting 203, #55.11
19. "X-ray variability in the Chandra Deep Field South" - Paolillo, M.; Schreier, E. J.; Giacconi, R.; Koekemoer, A. M.; Grogin, N. A.; presented to the 2003 American Astronomical Society Meeting 202, #42.14
20. "Deep ROSAT-HRI observation of the cD galaxy NGC 1399 in the Fornax cluster: morphology and dynamical status of the X-ray halo" - Authors: M.Paolillo, G. Fabbiano, G. Peres, D.-W. Kim, in the proceedings of the conference "Sesto 2001 - Tracing Cosmic Evolution with Galaxy Clusters", Sesto Pusteria (Bolzano), 3-6 Luglio 2001
21. "Deep HRI observation of the elliptical galaxy NGC1399" - Authors: M.Paolillo, G. Fabbiano, G. Peres, D.-W. Kim, in "X-Ray Astronomy 2000", ASP Conference Series, Vol. 234, 2001, R. Giacconi, S. Serio and L. Stella, eds.
22. "The Luminosity Function of 80 Abell Clusters from the CRoNaRio catalogues" - Authors: Piranomonte S., Paolillo M., Longo G., Andreon S., Puddu E., Scaramella R., Gal R., Djorgovski S.G., in "Virtual Observatories of the Future", 2001, ASP Conference Proceedings, Vol. 225. Edited by Robert J. Brunner, S. George Djorgovski, and Alex S. Szalay. San Francisco: Astronomical Society of the Pacific, p.73
23. "The Luminosity Function of 81 Abell Clusters from the CRoNaRio catalogues" - Authors: S. Piranomonte, M. Paolillo, S. Andreon, G. Longo, E. Puddu, R. Scaramella, R. Gal, S.G. Djorgovski, in "Constructing the Universe with Clusters of Galaxies", IAP 2000 meeting, Paris, France, July 2000, Florence Durret & Daniel Gerbal Eds.
24. "The Luminosity Function of 24 Abell clusters form the CRoNaRio catalogs" - Authors: M. Paolillo, S. Andreon, G. Longo, E. Puddu, S. Piranomonte, R. Scaramella, V. Testa, R. R. de Carvalho, S. G. Djorgovski, R. R. Gal, in XLIII Nat. Meet. of SAI "Le rivoluzioni in astronomia", ed.A. Rifatto, 71, 4.

25. "An automatic procedure to extract galaxy clusters from CRoNaRio catalogs" -Authors: E. Puddu, S. Andreon, G. Longo, M. Paolillo, R. Scaramella, V. Testa, R. R. Gal, R. R. de Carvalho, S. G. Djorgovski, in XLIII Nat. Meet. of SAI "Le rivoluzioni in astronomia", ed.A. Rifatto, 71, 4.