

## Curriculum Vitae

### Personal Information

First name/ Surname **Giuseppe Pupillo**  
Work Address Via Fiorentina 3513, 40059 Medicina (BO)  
Telephone +39 - 051 6965834  
E-mail [giuseppe.pupillo@inaf.it](mailto:giuseppe.pupillo@inaf.it)  
E-mail PEC  
Nationality Italian

**Position held** Technology researcher

### WORK EXPERIENCE

Dates	<b>1st August 2014 – Present</b>
Occupation or position held	Technology researcher
Main activities and responsibilities	<ul style="list-style-type: none"><li>• Member of the SKA-AAVS (Aperture Array Verification System) evaluation group;</li><li>• Support to the space debris observations with the "BIRALES" radar system in the framework of the ESA-SSA / SST segment;</li><li>• Software development for phased array calibration and characterization (low-frequency aperture arrays, Phased Array Feeds) with astronomical and artificial sources (drones);</li><li>• Responsible of the IRA-INAF Research Unit for the TECNO-INAF 2014 "<i>Advanced calibration techniques for next generation low-frequency radio astronomical arrays</i>".</li></ul>
Name and address of employer	INAF – Istituto di Radioastronomia (IRA) – Via Gobetti, 101 – 40129 Bologna – Italy
Dates	<b>March 2013 – July 2014</b>
Occupation or position held	Post-doc research fellow
Main activities and responsibilities	<ul style="list-style-type: none"><li>• Feasibility and performance analysis for a Vivaldi antenna's array;</li><li>• Coordinator of the measurement campaigns on the Medicina Array Demonstrator (MAD)</li><li>• Development of calibration/characterization algorithms for low-frequency aperture arrays based on artificial source installed onboard UAV (Unmanned Aerial Vehicle);</li></ul>
Name and address of employer	INAF – Istituto di Radioastronomia (IRA) – Via Gobetti, 101 – 40129 Bologna – Italy
Dates	<b>May 2012 – December 2012</b>
Occupation or position held	Research fellow



Main activities and responsibilities	<ul style="list-style-type: none"> <li>• Space Debris monitoring with bistatic radars: planning and computation of orbital elements in the framework of the measurements performed using INAF radio telescopes;</li> <li>• Coordination of the observational activities of the project "Medicina Support Activities for ESA Space Situational Awareness" with the INAF - IRA radio telescopes;</li> <li>• Local responsible of the radar experiment VLBR12.1 (Very Long Baseline Radar Interferometry) for the radio location of GEO satellites and their orbital elements refinement;</li> <li>• Post-processing of radio echoes acquired with the Medicina and Noto antennas digital backends.</li> </ul>
Name and address of employer	INAF – Istituto di Radioastronomia (IRA) – Via Gobetti, 101 – 40129 Bologna – Italy
Dates	<b>November 2007 – November 2011</b>
Occupation or position held	Post-doc fellow for "Radar for the data analysis physical-dynamical characterization of space debris"
Main activities and responsibilities	<ul style="list-style-type: none"> <li>• Coordination of the space debris radar campaigns with the bistatic (Evpatoria RT70 – Medicina RT32) and multi-static (Evpatoria RT70 – Medicina and Noto RT32) C band radars in the framework of the Italian Space Agency (ASI) Debris program (contracts ASI n. I/023/06/0 and n. I/046/07/1);</li> <li>• Software development for the antenna pointing in the beam-park and piggy-back and radar observational modes for space debris;</li> <li>• Astronomical calibration of the low-frequency array BEST-3LO for the application of digital beamforming;</li> <li>• Local coordinator in the Very Long Baseline Interferometric Radar campaigns VLBR07.2 and VLBR08.1, coordinated by the Keldysh Institute of Applied Mathematics (Moscow) for astrometric measurements of Venus, Mercury, NEA asteroids and space debris;</li> </ul>
Name and address of employer	INAF - Osservatorio Astronomico di Torino – Via Osservatorio, 20, 10025 Pino Torinese - Italy
Dates	<b>May 2007 – October 2007</b>
Occupation or position held	Post-Doc research fellow for "Space Debris radar observations"
Main activities and responsibilities	<ul style="list-style-type: none"> <li>• Coordination of the bistatic radar observations (WP120a) with the Evpatoria RT70 and Medicina RT32 antennas, in the framework of the Italian Space Agency (ASI) space debris program, (contract ASI n. I/023/06/0);</li> <li>• Software development for the bi-static/multi-static radar pointing in beam-park mode and for post-processing of radio echoes acquired in C-band with the Medicina VLBI backend;</li> <li>• Investigation of bistatic radar observational strategies for Low Earth Orbit (LEO) objects.</li> </ul>
Name and address of employer	<ul style="list-style-type: none"> <li>• INAF - Osservatorio Astronomico di Torino – Via Osservatorio, 20, 10025 Pino Torinese - Italy</li> </ul>
Dates	<b>March 2005 – December 2006</b>
Occupation or position held	Term-contract Worker (for research activity)
Main activities and responsibilities	<ul style="list-style-type: none"> <li>• Study of a VHF-band radar interferometer for identification of meteor radiant positions and speed measurements of meteoroids and space debris in atmospheric reentry;</li> <li>• Space debris and meteor streams monitoring campaigns with VHF forward-scatter radars;</li> <li>• Investigation of structural aspects of meteor streams and relation with their parent bodies</li> </ul>

(comets and asteroids).	
Name and address of employer	Consorzio per l'inquinamento dell'atmosfera e dello spazio circumterrestre (Consortium for the atmospheric and near-Earth pollution), Via S. Giuseppe, 30 – 73012 Campi Salentina, Italy
Dates	<b>December 2004 – January 2005</b>
Occupation or position held	Term-contract Worker (for research project)
Main activities and responsibilities	<ul style="list-style-type: none"> <li>Measurements of trace gas concentration and optical features of aerosol particles at Terra Nova Bay and Dome C (Antarctica) in the 2004/2.2 research project of the Italian National Antarctic Program.</li> <li>Instrumental calibration (spectrometers, solar photometers) on the field and data processing in the remote station "Campo Icaro" – Antarctica</li> </ul>
Name and address of employer	Consorzio per l'attuazione del Programma Nazionale di Ricerche in Antartide (PNRA) Srl, ENEA-CR, Via Anguillarese 301, 00123, Roma, Italy
Dates	<b>March 2001 – March 2005</b>
Occupation or position held	Research Fellow
Main activities and responsibilities	<ul style="list-style-type: none"> <li>Coordination of measurement campaigns with the meteor radar Bologna-Lecce-Modra (BLM) within the project "Environmental monitoring with in situ observations integrated with radar techniques";</li> <li>Software development and numerical simulations for the observability function and radiant mapping with meteor forward-scatter radars;</li> <li>Study of structure, flux and evolution of the main meteoroid populations;</li> <li>Impact risk for artificial satellites with meteoroids through VHF band radar measurements and ballistic damage equations;</li> </ul>
Name and address of employer	Department of Electronics and Telecommunication (DET) – Università degli Studi di Firenze – Via Santa Marta, 3 – 50139 Firenze, Italy
Dates	<b>September 2000 – March 2001</b>
Occupation or position held	Research Fellow
Main activities and responsibilities	<ul style="list-style-type: none"> <li>PI of the research project "Struttura ed evoluzione di popolazioni di meteoroidi da osservazioni radar" (Structure and evolution of meteoroid populations by radar observations), grant "Giovani ricercatori E.F. 1999", Italian Ministry of Education, University and Research (MIUR);</li> <li>Software development for BLM radar data post-processing;</li> <li>Analysis of the meteor activity of Leonid in the radar domain during the 1998-1999 outbursts and storms.</li> </ul>
Name and address of employer	Istituto di Scienze dell'Atmosfera e dell'Oceano (CNR – ISAO) – Via Gobetti, 101 – 40129 Bologna, Italy
<b>Education</b>	
31/03/2003	<b>Ph.D. in Astronomy</b> University of Bologna
Thesis Title	Radar detection of structural anomalies in meteor streams and risk analysis of meteoroid impact for the International Space Station

16/07/1999 **M.Sc. in Astronomy**

University of Bologna

Thesis Title Anomalie della materia interplanetaria nel dominio radar: implicazioni per l'attività spaziale

Final grades 110/110 *cum laude*

## PERSONAL SKILLS

Mother Tongue **Italian**

Other Language(s)

**English**

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
B2	B2	B1	B1	B2

*Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user*  
*Common European Framework of reference for languages*

Communication Skills

Excellent ability to work in team acquired during experience as a researcher within various research groups.

Organizational / managerial skills

Good organizational skills gained working as coordinator in several measurement campaigns and co-supervisor for Bachelor and Ms.Sc. theses.

Digital skills

### Programming

- Good command: FORTRAN, IDL, Matlab
- Basic command: LabView, Python

### Operative Systems

- MS-DOS, Windows, Linux

### Other software packets

- Microsoft Office, OpenOffice, Adobe Photoshop, LaTeX

Other skills

Astrophotography

Driving license

A, B



## Publications

International peer-reviewed  
journals

1. D. Cutajar, A. Magro, J. Borg, K. Zarb Adami, G. Bianchi, C. Bortolotti, A. Cattani, F. Focchi, L. Lama, A. Maccaferri, A. Mattana, M. Morsiani, G. Naldi, F. Perini, G. Pupillo, M. Roma, S. Rusticelli, M. Schiaffino, P. Di Lizia, M. Losacco, M. Massari, M. Reali, W. Villadei, "A real-time space debris detection system for BIRALES", *Journal of the British Interplanetary Society*, Vol. **72**, issue 3, pp.102-108, 2-s2.0-85067447694, (2019)
2. P. Di Ninni, P. Bolli, F. Paonessa, G. Pupillo, G. Virone, S.J. Wijnholds, "Electromagnetic Analysis and Experimental Validation of LOFAR Radiation Patterns", *International Journal of Antennas and Propagation*, vol. **2019**, Article ID 9191580, 12 pages, <https://doi.org/10.1155/2019/9191580>, (2019)
3. G. Virone, P. Bolli, F. Paonessa, G. Pupillo, S. J. Wijnholds, S. Matteoli, A. M. Lingua, J. Monari, G. Addamo, O. A. Peverini, "Strong Mutual Coupling Effects on LOFAR: Modeling and In-Situ Validation", *IEEE Transactions on Antennas and Propagation*, Volume: PP, Issue: **99**, doi: 10.1109/TAP.2018.2816651, (2018)
4. P. Bolli, G. Pupillo, F. Paonessa, G. Virone, S.J. Wijnholds, A.M. Lingua, "Near-field Experimental Verification of the EM Models for the LOFAR Radio Telescope", *IEEE Antennas and Wireless Propagation Letters*, issue **99**, DOI: 10.1109/LAWP.2018.2805999, (2018)
5. E. de Lera Acedo, P. Bolli, F. Paonessa, G. Virone, E. Colin-Beltran, N. Razavi-Ghods, I. Aicardi, A. Lingua, P. Maschio, J. Monari, G. Naldi, M. Piras, G. Pupillo, "SKA aperture array verification system: electromagnetic modeling and beam pattern measurements using a micro UAV", *Experimental Astronomy*, DOI: 10.1007/s10686-017-9566-x, (2017)
6. G. Naldi, A. Mattana, S. Pastore, M. Alderighi, K. Zarb Adami, F. Schillirò, A. Aminaei, J. Baker, C. Belli, G. Comoretto, S. Chiarucci, R. Chiello, S. D'Angelo, G. Dalle Mura, A. De Marco, R. Halsall, A. Magro, J. Monari, M. Roberts, F. Perini, M. Poloni, G. Pupillo, S. Rusticelli, M. Schiaffino, E. Zaccaro, "The Digital Signal Processing Platform for the Low Frequency Aperture Array: Preliminary Results on the Data Acquisition Unit", *J. Astron. Instrum.*, Vol. **06**, Issue 1, DOI:10.1142/S2251171716410142, (2017)
7. G. Comoretto, R. Chiello, M. Roberts, R. Halsall, K. Zarb Adami, M. Alderighi, A. Aminaei, J. Baker, C. Belli, S. Chiarucci, S. D'Angelo, A. De Marco, G. Dalle Mura, A. Magro, A. Mattana, J. Monari, G. Naldi, S. Pastore, F. Perini, M. Poloni, G. Pupillo, S. Rusticelli, M. Schiaffino, F. Schillirò, E. Zaccaro, "The Signal Processing Firmware for the Low Frequency Aperture ArrayThe Signal Processing Firmware for the Low Frequency Aperture Array", *J. Astron. Instrum.*, Vol. **06**, Issue 1, DOI: 10.1142/S2251171716410154, (2017)
8. P. Bolli, G. Pupillo, G. Virone, M. Z. Farooqui, A. Lingua, A. Mattana, J. Monari, M. Murgia, G. Naldi, F. Paonessa, F. Perini, S. Pluchino, S. Rusticelli, M. Schiaffino, F. Schillirò, G. Tartarini, A. Tibaldi, "From MAD to SAD: The Italian experience for the low-frequency aperture array of SKA1-LOW", *Radio Science*, **51**, DOI: 10.1002/2015RS005922, (2016)
9. G. Pupillo, G. Naldi, G. Bianchi, A. Mattana, J. Monari, F. Perini, M. Poloni, M. Schiaffino, P. Bolli, A. Lingua, I. Aicardi, H. Bendea, P. Maschio, M. Piras, G. Virone, F. Paonessa, Z. Farooqui, A. Tibaldi, G. Addamo, O.A. Peverini, R. Tascone, S.J. Wijnholds, "Medicina array demonstrator: calibration and radiation pattern characterization using a UAV-mounted radio-frequency source", *Experimental Astronomy*, Vol. **39**, Issue 2, pp. 405-421, DOI: 10.1007/s10686-015-9456-z, (2015)
10. G. Briani, E. Pace, S.N. Shore, G. Pupillo, A. Passaro, S. Aiello, "Simulations of micrometeoroid interactions with Earth atmosphere", *Astronomy & Astrophysics*, **552**, A53, 1-8, DOI: 10.1051/0004-6361/201219658, (2013)
11. M. Nechaeva, A. Antipenko, V. Bezrukovs, A. Dementjev, N. Dugin, A. Konovalenko, V. Kulishenko,

- X. Liu, A. Nabatov, V. Nesteruk, G. Pupillo, A. Reznichenko, E. Salerno, I. Shmeld, O. Shulga, Y. Sybirykova, Y. Tikhomirov, A. Tkachenkos, A. Volvach, W.Y. Yang, "An experiment on radio location of objects in the near-earth space with VLBI in 2012", *Baltic Astronomy*, **22**, 35-41, BIBCODE: 2013BaltA..22...35N, (2013)
12. M. Nechaeva, A. Antipenko, D. Bezrukov, VI. Bezrukovs, A. Dementjev, N. Dugin, N. Jekabsons, R. Khutornoy, M. Klapers, A. Konovalenko, V. Kulishenko, A. Nabatov, V. Nesteruk, G. Pupillo, A. Reznichenko, E. Salerno, I. Shmeld, K. Skirmante, Yu. Tikhomirov, V. Voytyuk, "First results of the VLBI experiment on radar location of the asteroid 2012 DA14", *Baltic Astronomy*, **22**, 341-346, BIBCODE: 2013BaltA..22..341N, (2013)
  13. S. Montebugnoli, M. Bartolini, G. Bianchi, C. Cosmovici, J. Monari, A. Orlati, F. Perini, S. Pluchino, G. Pupillo, E. Salerno, F. Schillirò, L. Zoni: "SETI-Italia 2008: on-going searches and future prospects", *Acta Astronautica*, **67**, 1350-1355, DOI: 10.1016/j.actaastro.2010.03.005, (2010)
  14. S. Montebugnoli, G. Pupillo, E. Salerno, S. Pluchino, M. Di Martino: "The bistatic radar capabilities of the Medicina radiotelescopes in space debris detection and tracking", *Advances in Space Research*, **45**, 676-682, DOI: 10.1016/j.asr.2009.09.011, (2010)
  15. S. Montebugnoli, C. Cosmovici, J. Monari, S. Pluchino, L. Zoni, M. Bartolini, A. Orlati, E. Salerno, F. Schillirò, G. Pupillo, F. Perini, G. Bianchi, M. Tani, L. D'Amico: "The next steps in SETI-Italia science and technology", *Acta Astronautica*, **66**, 610-616, DOI: 10.1016/j.actaastro.2009.07.015, (2010)
  16. V. Porubcan, P. Zigo, G. Cevolani, G. Pupillo, J. Rozboril: "Variation of sporadic meteor activity during the 23th cycle of solar activity", *Il Nuovo Cimento*, **124 B**, issue 1, 69-75, DOI: 10.1393/ncb/i2009-10740-8, (2009)
  17. P. Zigo, V. Porubcan, G. Cevolani, G. Pupillo: "The activity and mass distribution of the Geminid meteor shower of 1996-2007 from forward scatter radio observations", *Contributions of the Astronomical Observatory Skalnaté Pleso*, vol. **39**, issue 1, 5-17, BIBCODE: 2009CoSka..39....5Z, (2009)
  18. P. Zigo, V. Porubcan, G. Cevolani, M. Marti, G. Pupillo, "Geminid meteor shower of 1996-2007: Global activity from forward-scatter observations", *Il Nuovo Cimento*, **31 C**, issue 3, 275-280, DOI: 10.1393/ncc/i2008-10300-y, (2008)
  19. V. Porubcan, P. Zigo, P. Pecina, D. Pecinova, G. Cevolani, G. Pupillo, J. Rozboril: "Summer streams of the Taurid meteor complex", *Contrib. Astron. Obs. Skalnaté Pleso*, **37**, 31-48, EID: 2-s2.0-34250897365, (2007)
  20. V. Porubcan, P. Zigo, G. Pupillo, G. Cevolani, G. Bortolotti, C. Franceschi, G. Trivellone: "The Lyrid meteor stream: activity and mass distribution", *Il Nuovo Cimento*, **29 C**, 601-606, DOI: 10.1393/ncc/i2005-10212-4, (2006)
  21. G. Pupillo, V. Porubcan, P. Pecina, D. Pecinova, G. Cevolani, G. Bortolotti, C. Franceschi, G. Trivellone, P. Zigo: "The daytime Taurid complex meteor streams: activity and mass distribution", *Il Nuovo Cimento*, **28 C**, 941-946, EID: 2-s2.0-33644675702, (2005)
  22. V. Porubcan, L. Kornos, P. Pecina, G. Cevolani, G. Pupillo: "On the association of the daytime Taurid complex meteor streams with asteroids", *Il Nuovo Cimento*, **28 C**, 933-939, EID: 2-s2.0-33644683387, (2005)
  23. V. Porubcan, L. Kornos, G. Cevolani, G. Pupillo: "The orbit and evolution of the Geminid meteoroid stream", *Il Nuovo Cimento*, **27 C**, 395-400, DOI: 10.1393/ncc/i2004-10034-x, (2004)
  24. G. Pupillo, V. Porubcan, G. Bortolotti, G. Cevolani, C. Franceschi, A. Hajduk, L. Kornos, G. Trivellone and P. Zigo: "The Geminid meteor shower of 1996-2003 from forward-scatter observations: Activity and mass distribution", *Il Nuovo Cimento*, **27 C**, 301-305, DOI: 10.1393/ncc/i2004-10030-2, (2004)
  25. G. Pupillo, V. Porubcan, G. Cevolani, G. Bortolotti, C. Franceschi, G. Trivellone, P. Zigo, A. Hajduk: "The Quadrantid meteor shower 1997-2004: Activity and mass distribution", *Il Nuovo Cimento*, **27 C**,



- 213-217, DOI: 10.1393/ncc/i2004-10015-1, (2004)
26. V. Porubcan, A. Hajduk, G. Cevolani, G. Pupillo: "The Leonid meteor shower 1996-2002: Results from forward scatter radio observations", *Il Nuovo Cimento*, **26C**, 679-683, EID: 2-s2.0-3042680276, (2003)
  27. G. Cevolani, G. Pupillo: "Ground-based radio observations to probe the ozone content in the meteor region", *Annals of Geophysics*, **46**, 247-258, EID: 2-s2.0-0042626224, (2003)
  28. G. Pupillo, G. Cevolani: "Radar observations of the Leonid meteoroid stream in 2001", *Il Nuovo Cimento*, **26C**, 151-158, EID: 2-s2.0-0042914520, (2003)
  29. G. Cevolani, G. Pupillo, A. Hajduk and V. Porubcan: "Observations of the Leonid meteoroid stream by a multistation FS radio system", *Earth, Moon and Planets*, **82-83**, 265-276, BIBCODE: 2000EM&P...82..265C, (2000)
  30. G. Cevolani, G. Pupillo, E. Sbenaglia and G. Trivellone: "The display of the 1998 Leonid meteoroid stream from FS radio observations", *Il Nuovo Cimento*, **22C**, 747-754, EID: 2-s2.0-2242436176, (1999)

#### Other Publications and Proceedings

1. A. Navarrini, A. Scalambra, A. Melis, S. Rusticelli, R. Concu, P. Ortu, G. Naldi, G. Pupillo, A. Maccaferri, A. Cattani, A. Ladu, L. Schirru, F. Perini, M. Morsiani, J. Monari, J. Roda, P. Marongiu, A. Saba, M. Poloni, M. Schiaffino, A. Mattana, G. Bianchi, G. Comoretto, R. Nesti, E. Urru, T. Pisanu, F. Schillirò, K. Zarb Adami, A. Magro, R. Chiello, "The Warm Receiver Section and the Digital Backend of the PHAROS2 Phased Array Feed", 2019 IEEE International Symposium on Phased Array System & Technology (PAST), Waltham, MA, USA, 15-18 Oct. 2019, DOI: 10.1109/PAST43306.2019.9021018, (2019)
2. G. Pupillo, G. Bianchi, A. Mattana, G. Naldi, C. Bortolotti, M. Roma, M. Schiaffino, F. Perini, L. Lama, M. Losacco, M. Massari, P. Di Lizia, A. Magro, D. Cutajar, J. Borg, A. Maccaferri, S. Rusticelli, G. Purpura, "Operational Challenges of the Multibeam Radar Sensor BIRALES for Space Surveillance", 1st International Orbital Debris Conference (IOC), Sugar Land, TX, US, 9-12 Dec. 2019, ads bibcode: 2019LPICo2109.6202P, (2019)
3. M. Losacco, P. Di Lizia, M. Massari, G. Bianchi, G. Pupillo, A. Mattana, G. Naldi, C. Bortolotti, M. Roma, M. Schiaffino, F. Perini, L. Lama, A. Magro, D. Cutajar, J. Borg, W. Villadei, M. Reali, "The Multibeam Radar Sensor BIRALES: Performance Assessment for Space Surveillance and Tracking", AeroConf 2019 IEEE Aerospace Conference, Yellowstone, USA, 2-9 March 2019, DOI: 10.1109/AERO.2019.8741525, (2019)
4. M. Losacco, P. Di Lizia, M. Massari, G. Bianchi, G. Pupillo, A. Mattana, G. Naldi, C. Bortolotti, F. Perini, L. Lama, M. Schiaffino, M. Roma, A. Maccaferri, A. Magro, D. Cutajar, J. Borg, F. Monaci, "Space Surveillance with the Multibeam Radar Sensor BIRALES", 70th International Astronautical Congress (IAC 2019), Washington DC, USA, 21-25 October 2019, IAC-19.A6.9.9, pp. 1-8, 2-s2.0-85079143865, (2019)
5. G. Virone, F. Paonessa, S. Matteoli, L. Ciorba, G. Addamo, O.A. Peverini, G. Pupillo, E. de Lera Acedo, E. Colín-Beltrán, N. Razavi Ghods, A.M. Lingua, M. Piras, A. Irene, P. Bolli, K. Zarb Adami, A. Magro, "The SKA Aperture Array Verification System: Measured Digitally-Beam-Formed Radiation Patterns", 2019 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, Atlanta, USA, 7-12 July 2019, DOI: 10.1109/APUSNCURSINRSM.2019.8888321, (2019)
6. P. Di Ninni, P. Bolli, R. Nesti, G. Virone, G. Pupillo, S.J. Wijnholds, "Antenna Phase Center Analysis for the LOFAR Radio Telescope", 2019 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, Atlanta, GA, USA, 7-12 July 2019, DOI: 10.1109/APUSNCURSINRSM.2019.8888745, (2019)





7. M. Losacco, M. Massari, P. Di Lizia, G. Bianchi, G. Pupillo, A. Mattana, G. Naldi, C. Bortolotti, M. Roma, M. Schiaffino, F. Perini, L. Lama, A. Magro, D. Cutajar, J. Borg, F. Monaci: "Multibeam Radar Technology applied to Space Surveillance in the LEO Regime", Proceedings of the 25th Conference of the Italian Association of Aeronautics and Astronautics (AIDAA 2019), Rome, Italy, 9-12 Sept. 2019, pp. 972-980, ISBN: 978-88-943960-1-0, (2019)
8. M. Losacco, P. Di Lizia, M. Massari, A. Mattana, F. Perini, M. Schiaffino, C. Bortolotti, M. Roma, G. Naldi, G. Pupillo, G. Bianchi, L. Lama, D. Cutajar, A. Magro, C. Portelli, M. Reali, W. Villadei, "The Multibeam Radar Sensor BIRALES: Performance Assessment for Space Surveillance and Tracking", 69th International Astronautical Congress (IAC), Bremen, Germany, 1-5 October 2018, IAC-18,A6,IP,10,x44514, (2018)
9. D. Cutajar, A. Magro, J. Borg, K. Zarb Adami, G. Bianchi, C. Bortolotti, A. Cattani, F. Focchi, L. Lama, A. Maccaferri, A. Mattana, M. Morsiani, G. Naldi, F. Perini, G. Pupillo, M. Roma, S. Rusticelli, M. Schiaffino, P. Di Lizia, M. Losacco, M. Massari, M. Reali, W. Villadei: "A real-time space debris detection system for BIRALES", 69th International Astronautical Congress (IAC), Bremen, Germany, 1-5 October 2018, IAC-18.A6.1.9x47208, 2-s2.0-85065295503, (2018)
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5. G. Pupillo, A. Mattana, G. Naldi, "Calibrazione di fase per array E/W a bassa frequenza", **IRA 467/13**, Istituto di Radioastronomia – INAF, (2013);
6. A. Mattana, G. Naldi, G. Pupillo, "Space Debris Digital Beamformer based on CASPER Hardware", **IRA 462/12**, Istituto di Radioastronomia – INAF, (2012);
7. F. Calzolari, G. Pupillo, "Progetto 2004/2.2: Misure di concentrazione di gas in traccia e delle caratteristiche ottiche delle particelle di aerosol a Baia Terra Nova e Dôme C (DO3meCO2)" in *Rapporto sulla Campagna Antartica – Estate Australe 2004-2005*, **ANT05/01**, ISSN 1723-7084, pp. 18-21, (2005)
8. S. Montebugnoli, A. Cattani, C. Bortolotti, F. Focchi, F. Liberati, J. Monari, A. Maccaferri, S. Mariotti, A. Orlati, F. Perini, S. Righini, M. Poloni, M. Roma, A. Scalambra, M. Teodorani, Tittarelli, F.F., G. Cevolani, G. Bortolotti, G. Pupillo, G. Trivellone, B.G. Hauge, E.P. Strand: "Low Power Pulsed Radar For Induced Atmospheric Phenomena Investigation", **IRA 321/02**, Istituto di Radioastronomia, (2002)

#### Extended Abstracts

1. P. Bolli, M.Z. Farooqui, A. Lingua, A. Mattana, J. Monari, M. Murgia, G. Naldi, F. Paonessa, F. Perini, G. Pupillo, S. Rusticelli, M. Schiaffino, F. Schilliro, G. Tartarini, A. Tibaldi, G. Virone, "From MAD to SAD: The Italian experience for the low-frequency aperture array of SKA-LFAA", *1st URSI Atlantic Radio Science Conference, URSI AT-RASC 2015*, DOI: 10.1109/URSI-AT-





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2. S. Montebugnoli, G. Bianchi, M. Bartolini, A. Mattana, J. Monari, G. Naldi, F. Perini, S. Pluchino, G. Pupillo, "SETI-Italia: present activities and future real time data processing system", *Astrobiology Science Conference 2010*, BIBCODE: 2010LPICo1538.5011M, (2010)
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6. I. Kostadinov, G. Giovannelli, G. Cevolani, E. Cupini, G. Pupillo, P. Mazzinghi & EUSO Collaboration, "EUSO: Extreme Universe Space Observatory atmosphere phenomena", *Proceedings of 27th International Cosmic Ray Conference*, BIBCODE: 2001ICRC....2..847K, (2001)

#### Outreach publications

1. E. Salerno, S. Montebugnoli, G. Pupillo: Detriti Spaziali: un nuova emergenza dallo spazio – su *Rivista Aeronautica*, Year LIV, n.10, p.18, October 2009
2. G. Pupillo: ALADIN: un sito dinamico per l'astrofotografia – su *Astronomia* (ISSN 0392-2308), n.4, p. 69 – 71, BIBCODE: 2004AsUA...4...69P, (2004)
3. G. Pupillo: Il cammino di Venere: tecniche di osservazione e ripresa – su allegato a *l'Astronomia* n.253, May 2004
4. G. Pupillo: Spirit e Opportunity: due robot gemelli esplorano Marte – su supplemento a *l'Astronomia* n.251, March 2004

#### Teaching

1. **A.A. 2010-2011** – co-advisor of the bachelor's degree thesis "Movimentazione automatica del telescopio ottico ALMASCOPE per osservazioni di space debris", by Alfredo Locarini, Corso di Laurea in Ingegneria Aerospaziale – Università di Bologna
2. **2009** – lecturer of the 3° Corso UAI di Didattica della Radioastronomia (accreditato MIUR) presso la Stazione Radioastronomica di Medicina – INAF
3. **A.A. 2003-2004** – co-relatore per la tesi di laurea "Radiant mapping di sciami meteorici con radar bistatico interferometrico", di Stefano Ferretti, Corso di laurea in Astronomia – Università di Bologna
4. **A.A. 2002-2003** – co-relatore per la tesi di laurea "Analisi di sciami meteorici di origine cometaria attraverso tecniche radar e visuali" di Mario Sandri, Corso di laurea in Fisica – Università di Padova
5. **A.A. 2001-2002** - co-relatore per la tesi di laurea "Attività meteorica e misure di ozono in alta atmosfera" di Cristian Girometti, Corso di laurea in Astronomia – Università di Bologna

Dall'A.S. 2006/2007 all'A.S. 2013/2014 ha svolto supplenze di matematica e fisica (classe di concorso A049) presso gli istituti secondari superiori.

