

# LEAH K. MORABITO

Durham University  
Assistant Professor

## PERSONAL DETAILS

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## EMPLOYMENT HISTORY

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Oct 2019 - Present      Assistant Professor, *Durham University*  
Oct 2016 - Sep 2019      Hintze Fellow & PDRA in Galaxy Evolution, *University of Oxford*  
Apr 2005 - Aug 2011      Air Battle Manager (highest rank: Captain), *United States Air Force*

- Electronic Combat Officer (ECO) *Sep 2008 - Aug 2011*
- Air Weapons Officer (AWO) *Jun 2005 - Aug 2008*

## EDUCATION

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Sep 2012 - Sep 2016      **Leiden University**, Astronomy PhD Researcher  
Thesis: '*Radio Galaxies at Low Frequencies*'  
Sep 2009 - Apr 2012      **University of Oklahoma**, M.Sc. Astronomy (with Honours. 1 equiv.)  
Thesis: '*AGN: From Supermassive Black Holes to Rare FeLoBALs*'  
Sep 2001 - Apr 2005      **University of Michigan**, B.Sc. Physics & B.Sc. Astrophysics (2i equiv.)

## SCIENCE HIGHLIGHTS

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- First spatially resolved maps of high redshift radio galaxies, 1'' resolution at 55 MHz
- First extragalactic detection of low frequency carbon radio recombination lines, in M82
- Widest, deepest survey image at the time with low band Low Frequency Array (LOFAR) data
- Highest resolution radio images at low frequencies and low declination (in XMM-LSS field)

## RESEARCH GOALS

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My main goal is to answer fundamental questions on how super-massive black holes co-evolve with the galaxies in which they reside. I do this by using low frequency radio observations coupled with multi-wavelength data. Over the next five years, I will lead the use of high-resolution, wide-field radio imaging at low frequencies to clearly distinguish two main components in galaxy evolution: star formation, and processes associated with active galactic nuclei. This unique approach will help change our view of how active galactic nuclei help shape galaxy evolution.

## LEADERSHIP

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**Co-leadership of Long Baseline Working Group.** Co-leadership and training of 10+ postdocs, PhD, and MSc students working on technical challenges for high-resolution imaging with LOFAR. 2016 - present

**President of Oxford Women in Physics Society.** Leadership of committee of 10+ women, focused on providing a supportive network for women in Physics at Oxford, from the undergraduate to the faculty level. Jan 2018 - present

**Member of Department Equality & Diversity Committee.** Contributing member of committee as President of Oxford Women in Physics Society, heading up mentoring programme reform. Jan 2018 - present

**Galaxies Coffee Organizer.** Weekly journal club meeting of about 10 - 15 active participants. Oct 2017 - present

**Head of AWACS PEX Implementation.** Spearheaded transition to new program tracking training and flying hours for 1,800 aircrew (largest implementation in the Air Force). Apr - June 2011

**Chair of Electronic Support Team.** Led and trained a team of 15 to prepare for, support and conduct electronic combat in a deployed location. Won team award at highest level for all organisations at deployed location. This work improved intelligence databases across entire Air Force. Jan - Sep 2009

<b>Package Commander for Command, control, intelligence, surveillance and reconnaissance (C2ISR).</b> Led collection of aircraft providing C2ISR functions for multiple large training exercises (total of 100+ air assets on average).	Feb - Mar 2009
<b>Operations Group Commander.</b> Designed and conducted entire training programme for corps of 150+ US Air Force cadets.	Sep - Dec 2004
<b>Co-Founder/President, Society of Women in Physics (SWiP).</b> Wrote constitution, secured University funding, and started program focused on mentorship of younger women undergraduate students, and promoting women and girls in STEM fields.	Sep 2004 - Apr 2005

## PROFESSIONAL EXPERIENCE

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<b>Lorentz Centre Workshop: High Resolution Surveying with LOFAR.</b> Main organiser: including writing proposal and securing funding.	Mar 2018
<b>LOFAR Long Baseline Workshops.</b> Helped with and then co-led developing the LOFAR long baseline data reduction pipeline, and training of new users.	2015 - present
<b>LOFAR Low Band Antenna Busy Week.</b> Led first busy week exclusively devoted to working on challenges for the LOFAR Low Band Antenna.	Mar 2016
<b>LOFAR Commissioning Busy Weeks.</b> Participated in 10 busy weeks to commission software for low-frequency, wide-field imaging.	Jul 2012 - present
<b>Chair of Local Organising Committee, LOFAR Busy Week 21.</b> Workshop with specialized talks / training for new users; 40+ global participants.	Jan 2013
<b>Evaluator/Instructor Electronic Combat Officer (ECO), USAF, Capt.</b> Operated Passive Detection System on E-3 Airborne Warning And Control System (AWACS). Culminated career as Chief Evaluator / subject matter expert.	Aug 2008 - Aug 2011
<b>Air Weapons Officer, USAF, 1Lt.</b> Controlled tactical aircraft from AWACS. Deployed in support of combat missions in southwest Asia.	Jun 2005 – Aug 2008

## INDICATORS OF ESTEEM

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- **Viva examiner.** MSc thesis, Emmanuel Bempong-Manful, Univ. of Hertfordshire. (February 2018)
- **Member of LOFAR 2.0 Science Advisory Panel.** Expert on using LOFAR international stations for high resolution imaging. (2018 - present)
- **Referee for papers in peer-reviewed journals.** Monthly Notices of the Royal Astronomical Society, Journal of Astrophysics and Astronomy. (2018 - present)
- **Technical review of observing proposals.** The Low Frequency Array and the Giant Metre-wave Radio Telescope. (2017 - present)
- **Resident Shared Risk Observing, JVLA.** Granted telescope time as an expert user and assessed P-band spectroscopic utility on-site with staff at National Radio Astronomy Observatory. (Apr 2015)
- **Early upgrade to ECO instructor.** Hand-picked based on performance and ability to teach to become an instructor after only 8 months (minimum requirement 1 year).

## FUNDING AWARDS

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Mar 2018	Lorentz Center workshop: High-Resolution Imaging with LOFAR (10,985 Euro) <ul style="list-style-type: none"> <li>• RadioNet funding to support early-career researchers (2,000 Euro)</li> <li>• Funding from ASTRON to support minority researchers (1,000 Euro)</li> <li>• Lorentz Center support for workshop (7,985 Euro)</li> </ul>
Dec 2017	Grant for 100 TB disk for working on data, Christ Church Research Centre (8,580 GBP)
Oct 2017	Millard & Lee Alexander Post-Doctoral Fellowship, Christ Church, 2 year room & board
Jun 2014	Leids Kerkhoven-Bosscha Fonds grant for travel to international conference (1,000 Euro)
Nov 2013	Award for contribution to successful NWO-TOP1 grant (total grant 4 million Euro)
Sep 2001	Reserve Officer Training Corps Scholarship (approximately 120,000 USD)
May 2001	University of Michigan Regents Merit Scholarship (3,000 USD)

## HONOURS

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Oct 2018	Better Satellite World Award for Development in Africa with Radio Astronomy
Apr 2017	Top 5% of applicants for L'Oréal-UNESCO For Women in Science Awards
2010	Electronic Combat Officer of the year
Mar 2010	'Exceptionally Qualified' Rating (top 1%), Initial Electronic Combat Officer Evaluation
Feb 2010	Distinguished Graduate, Instructor Electronic Combat Officer Training
Dec 2008	Distinguished Graduate, Electronic Combat Officer Training (perfect exam score average)
Sep 2009	Air Medal (Oak leaf cluster), for flying combat hours
Sep 2009	Air Force Achievement Medal, for leadership of Deployed Electronic Support Team
May 2008	Air Medal, for flying combat hours
May 2007	Distinguished Graduate, Initial Air Weapons Officer Qualification Training
Jul 2006	Top Scope Award, Undergraduate Air Battle Management Training
Apr 2005	College of Literature, Science & the Arts 'Angell Scholar'

## PROFESSIONAL SOCIETY MEMBERSHIPS

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Aug 2018 – present	Junior member of International Astronomical Union
Jan 2018 – present	Oxford Society of Women in Physics, President
Feb 2017 – present	Member of Royal Astronomical Society, by election
Oct 2016 – Jan 2018	Oxford Society of Women in Physics, Outreach Officer
Sep 2011 – Dec 2015	Member of American Astronomical Society
Apr 2005 – present	Member of Sigma Pi Sigma, National Physics Honors Society, by election
2004 - 2005	Co-President/founder of Society for Women in Physics, University of Michigan

## LARGE SURVEY MEMBERSHIP

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- **Member of:** LOFAR Surveys Key Science Project, SKA Extragalactic Continuum Surveys Working Group, WEAVE-LOFAR, HETDEX, MIGHTEE, AGES-XL, RadioNet RINGS

## ALLOCATION OF TELESCOPE TIME

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- **LOFAR:** 150+ hours PI projects; 250+ hours co-I projects; 1500+ hours for LOFAR Surveys
- **JVLA:** 17 hours PI projects; 230+ hours co-I projects
- **VLBA:** 450 hours co-I project (JWST NEP field)
- **GMRT:** 116 hours co-I projects
- **INT:** 12 nights co-I projects

## OBSERVING EXPERIENCE

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- GMRT radio telescope, Pune, India, 5 nights
- INT 2.5 m optical telescope, Roque de los Muchachos, La Palma, 18 nights
- MDM 2.4 m Hiltner optical telescope, Tucson, AZ, USA, 7+ nights

## COMPUTING SKILLS

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- **High Performance Computing:** TORQUE and slurm queuing systems, PBS scripting, processing hundreds of TB of data simultaneously
- **Data interfacing:** Implemented Google Earth for intelligence fusion used during combat flights
- **Operating systems:** Linux, Mac, Windows, and standard packages therein
- **Programming Languages:** R, Python, IDL, Bash, FORTRAN
- **Data pipelines:** Written end-to-end pipelines for LOFAR data (high resolution / ultra low frequency)
- **Astronomical Software:** LOFAR software, AIPS, CASA, ParselTongue, HEASOFT, PIMMS, XSELECT, IRAF, CIAO, SHERPA, XSPEC, FTOOLS, STILTS

## TEACHING EXPERIENCE

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<b>LOFAR Data School.</b> Invited lecturer and subject matter expert in high resolution imaging (50 students).	Sep 2018
<b>Lecturer, Oxford Prospects Programme.</b> Lecturer on the topic of astrophysics for groups of about 50 students, 2 week programme repeated 3x per year for Chinese students.	2017 - present
<b>Unit 2 &amp; 3 DARA training at HartRAO.</b> Delivered lectures, tutorials, and an invited talk as part of Development in Africa with Radio Astronomy (DARA) course at Hartebeesthoek Radio Astronomy Observatory, South Africa.	Apr 2018
<b>Teaching Assistant, Radio Astronomy MSc class.</b> Developed tutorials and practical project for 14 students, supervised hands-on sessions, organized and conducted field trip to Dutch radio observatories.	Jan - Jul 2015
<b>Instructor, Initial Electronic Combat Officer Training.</b> Primary instructor for 4 month lecture/practical course, repeated every 5 months for 4-8 students. Delivered lectures, led discussions, and helped students with simulated missions to learn critical tasks.	Sep 2009 - Aug 2011
<b>ECO Syllabus Review Conference.</b> Led ECO training syllabus review amongst instructors/evaluators, identified 50 updates to the Training Task list.	Jul 2010
<b>Squadron ECO continuing education program.</b> Designed and implemented squadron ECO continuing education program, adopted by two other squadrons.	Feb 2009
<b>Electronic Support Fundamentals Class.</b> Designed curriculum, coordinated guest speakers, and taught 5-day course to correct training deficiencies.	Jun 2011

## STUDENT SUPERVISION

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<b>Supervision of students.</b> Formally supervised 3 MSc and 3 summer students to successful completion of research projects using low frequency radio data. Informally supervise 2 PhD students working on LOFAR high resolution projects.	Sep 2013 – present
<b>Co-supervision of PhD minor project.</b> Collaboration with Prof. Gal in Computer Science department at Oxford to supervise PhD project on topic of using machine learning to cross-match multi-wavelength surveys.	Apr – Jun 2018
<b>Instructor, Initial Electronic Combat Officer Flight Training.</b> Trained individuals on-the-job during flights (6 per student). Trained 35 students with an unprecedented 40% rate of Distinguished graduates (top 10% of class).	Sep 2009 - Aug 2011

## PUBLIC ENGAGEMENT

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<b>Invited Public Lectures.</b> Lectures for general public on super-massive black holes and galaxy evolution. Green Templeton College (65 people; 21 Feb 2018). Guildford Astronomical Society (85 people; 7 Nov 2019).	
<b>Outreach Coordinator, Oxford Women in Physics.</b> New position in the organisation, planning two major upcoming events within the next eight months. Contributed to events like Somerville Girls into Science Day 2017.	Oct 2016 – Jan 2018
<b>Public Outreach, Leiden Old Observatory.</b> Helped with open day for public to view the observatory, visitor's center, and participate in outreach activities.	Oct 2012, 2014
<b>Physics Girls' Inreach.</b> Developed content for and organized all logistics for public inreach targeted to 10/11 year old girls with the intent to interest them in science and show them strong female role models.	Apr 2005
<b>Angell Hall Public Viewing Nights.</b> Operated 0.6 meter telescope, Celestron 8 telescopes, and planetarium at Angell Hall Observatory for public viewing nights with the Student Astronomical Society.	Jan 2003 - Apr 2005
<b>Physics Public Outreach.</b> Taught multiple hour-long workshops on various physical principles with the Society of Physics Students.	Aug 2004 - Apr 2005

## SELECTED SCIENTIFIC PRESENTATIONS

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Total of 47 talks, 19 of which were invited. Yearly highlights only are given.

### 2019

- *LOFAR-VLBI*, LOFAR Surveys Key Science Project collaboration meeting, **Torino, IT** 16 Dec
- *A Low Frequency Radio Perspective on AGN*, Astronomy Seminar (Invited), **Liverpool John Moores, UK** 30 Oct
- *AGN Surveys at low frequencies with the International LOFAR Telescope*, SKA-VLBI Workshop (Invited), **SKA Headquarters, UK** 15 Oct
- *A Low Frequency Radio Perspective on AGN*, Astronomy Colloquium (Invited), **Sheffield, UK** 12 Jun
- *The Low Frequency Array and the power of radio surveys*, Multi-messenger astronomy with SKA precursors and pathfinders, a capacity building workshop (Invited), **Aveiro, PT** 13 May
- *LOFAR Science: broad absorption line quasars and the path to high resolution imaging*, SPARCS IX, **Lisbon, PT** 6 May
- *A Low Frequency Radio Perspective on AGN*, JBCA Colloquium (Invited), **Manchester, UK** 1 May

### 2018

- *A Low Frequency Radio Perspective on AGN*, Astronomy Colloquium (Invited), **ASTRON, NL** 25 Oct
- *A Low Frequency Radio Perspective on AGN*, Astronomy Group Seminar (Invited), **University of Southampton, UK** 16 Oct
- *A Low Frequency Radio Perspective on AGN*, Astronomy Colloquium (Invited), **University College Dublin, IE** 4 Oct
- *A Low Frequency Radio Perspective on AGN*, Astronomy Colloquium (Invited), **Oskar Klein Centre, Stockholm, SE** 12 Jun
- *My Journey in Science*, Oxford Scientist launch event (Invited), **University of Oxford, UK** 2 Jun

### 2017

- *High-redshift radio sources in MIGHTEE*, MIGHTEE Continuum Working Group Meeting, **Oxford, UK** 20 Sep
- *LOFAR to SKA: an observer's perspective*, Astronomy and Science from the Moon (Invited), **Paris Observatory, FR** 22 Jun
- *A Low Radio Frequency Perspective on Galaxy Evolution*, Astronomy Colloquium (Invited), **University of Sussex, UK** 26 May
- *Introduction to LOFAR Long Baselines*, Long Baseline Workshop, **Netherlands Institute for Radio Astronomy, NL** 9-13 Jan

### 2016

- *Long Baseline Imaging (aka VLBI with LOFAR)*, LOFAR Surveys Key Science Project Meeting, **Bologna, IT** 29-31 Oct
- *Radio Galaxies at Low Frequencies: high spatial and spectral resolution studies with LOFAR*, General Astronomy Colloquium, **University of Leiden, NL** 6 Sep
- *High Resolution Studies of 4C 43.15 with International LOFAR*, LOFAR Community Science Workshop, **Zandvoort aan Zee, NL** 4-7 Apr

### 2015

- *Studying the ultra-steep spectra of high redshift radio galaxies with LOFAR*, Lunch Talk (Invited), **University of Hertfordshire** 13 Nov
- *Low-frequency Views on the Cold Neutral Medium and High Redshift Radio Galaxies*, Galaxy Evolution Seminar (Invited), **University of Oxford, UK** 12 Nov
- *LOFAR Survey of Spatially Resolved Ultra-Steep Spectrum Sources*, The Many Facets of Extragalactic Radio Surveys, **Bologna, IT** 20-25 Oct
- *Low frequency radio astronomy with LOFAR: spectroscopy and long baselines*, Lunch talk (Invited), **Carnegie Observatory, CA** 24 Jul

- *Low frequency radio astronomy with LOFAR: spectroscopy and long baselines*, Lunch talk (Invited), IPAC/Caltech, US 22 Jul

## 2014

- *Spatially Resolved Studies of (Extragalactic Jets in) High- $z$  Radio Galaxies at Low Frequencies*, IAU 313: Extragalactic Jets from Every Angle, **Galapagos, EC** 17 Sep
- *Discovery of Carbon Radio Recombination Lines in M82*, IAU 309: Galaxies in 3D, **University of Vienna, AT** 11 Jul
- *Discovery of Carbon Radio Recombination Lines in M82*, LOFAR Community Science Workshop, **Amsterdam, NL** 8 Apr

## 2013

- *LOFAR: Radio Recombination Lines and High Redshift Radio Galaxies*, Special Seminar (Invited), **University of Oklahoma, USA** 16 Dec
- *High Redshift Radio Galaxies and the Advent of LOFAR*, Google Tech Talk (Invited), **Google office, Munich, DE** 11 Oct
- *Radio Recombination Lines and Long Baselines on 4C41.17*, Astronomy, Radio Sources and Society, **Leiden, NL** 10-14 Jun

## 2012

- *Active Galactic Nuclei: from Supermassive Black Holes to Rare FeLoBALs*, Lunch Talk (Invited), **National Radio Astronomy Observatory, New Mexico, USA** 25 Jul
- *X-ray Observations of Broad Absorption Line Quasars*, Cosmology Seminar, **University of Oxford** 22 Nov

## PUBLICATION RECORD

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9 first-author, 3 second-author, and 32 co-author peer-reviewed publications; also 8 conference proceedings. Total of 866 citations as of 12 Jan 2020.

### First Author

- (1) **Morabito**, L. K., Matthews, J. H., Best, P. N., and 14 colleagues *The origin of radio emission in broad absorption line quasars: Results from the LOFAR Two-metre Sky Survey*. A&A, 622, A15. **2019**, cit. 2
- (2) **Morabito**, Leah K. and Harwood, Jeremy J. *Investigating the cause of the  $\alpha$ - $z$  relation*. MNRAS, 480, 2726-2732. **2018**, cit. 2
- (3) **Morabito**, Leah K., Williams, W. L., Duncan, Kenneth J., and 17 colleagues *Investigating the unification of LOFAR-detected powerful AGN in the Boötes field*. MNRAS, 469, 1883-1896. **2017**, cit. 9
- (4) **Morabito**, Leah K., Deller, Adam T., Röttgering, Huub, and 8 colleagues *LOFAR VLBI studies at 55 MHz of 4C 43.15, a  $z = 2.4$  radio galaxy*. MNRAS, 461, 2676-2687. **2016**, cit. 6
- (5) **Morabito**, Leah K., Oonk, J. B. R., Salgado, Francisco, and 30 colleagues *Discovery of Carbon Radio Recombination Lines in M82*. ApJ, 795, L33. **2014**, cit. 19
- (6) **Morabito**, Leah K., Dai, Xinyu, Leighly, Karen M., Sivakoff, Gregory R., and Shankar, Francesco *Unveiling the Intrinsic X-Ray Properties of Broad Absorption Line Quasars with a Relatively Unbiased Sample*. ApJ, 786, 58. **2014**, cit. 11
- (7) **Morabito**, Leah K., van Harten, Gerard, Salgado, Francisco, and 3 colleagues *Exact bound-bound Gaunt factor values for quantum levels up to  $n = 2000$* . MNRAS, 441, 2855-2860. **2014**, cit. 2
- (8) **Morabito**, Leah K. and Dai, Xinyu *A Bayesian Monte Carlo Analysis of the  $M$ - $\sigma$  Relation*. ApJ, 757, 172. **2012**, cit. 8
- (9) **Morabito**, Leah K., Dai, Xinyu, Leighly, Karen M., Sivakoff, Gregory R., and Shankar, Francesco *Suzaku Observations of Three FeLoBAL Quasi-stellar Objects: SDSS J0943+5417, J1352+4239, and J1723+5553*. ApJ, 737, 46. **2011**, cit. 14

### Second Author

- (1) Salgado, F., Morabito, L. K., Oonk, J. B. R., and 4 colleagues *Low-frequency Carbon Radio Recombination Lines. I. Calculations of Departure Coefficients*. ApJ, 837, 141. **2017**, cit. 17
- (2) Salgado, F., Morabito, L. K., Oonk, J. B. R., and 4 colleagues *Low-frequency Carbon Radio Recombination Lines. II. The Diffuse Interstellar Medium*. ApJ, 837, 142. **2017**, cit. 11
- (3) Oonk, R., Morabito, L., Salgado, F., and 4 colleagues *The Physics of the Cold Neutral Medium: Low-frequency Radio Recombination Lines with the Square Kilometre Array*. Advancing Astrophysics with the Square Kilometre Array (AASKA14), 139. **2015**, cit. 5

## Co-Author

- (1) Shimwell, T. W., Tasse, C., Hardcastle, M. J., and 104 colleagues *The LOFAR Two-metre Sky Survey. II. First data release*. A&A, 622, A1. **2019**, cit. 62
- (2) Williams, W. L., Hardcastle, M. J., Best, P. N., and 38 colleagues *The LOFAR Two-metre Sky Survey. III. First data release: Optical/infrared identifications and value-added catalogue*. A&A, 622, A2. **2019**, cit. 22
- (3) Hardcastle, M. J., Williams, W. L., Best, P. N., and 20 colleagues *Radio-loud AGN in the first LoTSS data release. The lifetimes and environmental impact of jet-driven sources*. A&A, 622, A12. **2019**, cit. 21
- (4) de Gasperin, F., Dijkema, T. J., Drabent, A., and 17 colleagues *Systematic effects in LOFAR data: A unified calibration strategy*. A&A, 622, A5. **2019**, cit. 20
- (5) Duncan, K. J., Sabater, J., Röttgering, H. J. A., and 24 colleagues *The LOFAR Two-metre Sky Survey. IV. First Data Release: Photometric redshifts and rest-frame magnitudes*. A&A, 622, A3. **2019**, cit. 18
- (6) Sabater, J., Best, P. N., Hardcastle, M. J., and 18 colleagues *The LoTSS view of radio AGN in the local Universe. The most massive galaxies are always switched on*. A&A, 622, A17. **2019**, cit. 16
- (7) O’Sullivan, S. P., Machalski, J., Van Eck, C. L., and 27 colleagues *The intergalactic magnetic field probed by a giant radio galaxy*. A&A, 622, A16. **2019**, cit. 10
- (8) Gürkan, Gülay, Hardcastle, M. J., Best, P. N., and 17 colleagues *LoTSS/HETDEX: Optical quasars. I. Low-frequency radio properties of optically selected quasars*. A&A, 622, A11. **2019**, cit. 7
- (9) Mingo, B., Croston, J. H., Hardcastle, M. J., and 15 colleagues *Revisiting the Fanaroff-Riley dichotomy and radio-galaxy morphology with the LOFAR Two-Metre Sky Survey (LoTSS)*. MNRAS, 488, 2701-2721. **2019**, cit. 6
- (10) Croston, J. H., Hardcastle, M. J., Mingo, B., and 13 colleagues *The environments of radio-loud AGN from the LOFAR Two-Metre Sky Survey (LoTSS)*. A&A, 622, A10. **2019**, cit. 6
- (11) Mooney, S., Quinn, J., Callingham, J. R., and 13 colleagues *Blazars in the LOFAR Two-Metre Sky Survey first data release*. A&A, 622, A14. **2019**, cit. 3
- (12) Mahatma, V. H., Hardcastle, M. J., Williams, W. L., and 19 colleagues *LoTSS DR1: Double-double radio galaxies in the HETDEX field*. A&A, 622, A13. **2019**, cit. 3
- (13) Hale, C. L., Williams, W., Jarvis, M. J., and 12 colleagues *LOFAR observations of the XMM-LSS field*. A&A, 622, A4. **2019**, cit. 2
- (14) Stacey, H. R., McKean, J. P., Jackson, N. J., and 15 colleagues *LoTSS/HETDEX: Disentangling star formation and AGN activity in gravitationally lensed radio-quiet quasars*. A&A, 622, A18. **2019**, cit. 0
- (15) Williams, W. L., Calistro Rivera, G., Best, P. N., and 13 colleagues *LOFAR-Boötes: properties of high- and low-excitation radio galaxies at  $0.5 < z < 2.0$* . MNRAS, 475, 3429-3452. **2018**, cit. 15
- (16) Nyland, K., Harwood, J. J., Mukherjee, D., and 19 colleagues *Revolutionizing Our Understanding of AGN Feedback and its Importance to Galaxy Evolution in the Era of the Next Generation Very Large Array*. ApJ, 859, 23. **2018**, cit. 11
- (17) Read, S. C., Smith, D. J. B., Gürkan, G., and 14 colleagues *The Far-Infrared Radio Correlation at low radio frequency with LOFAR/H-ATLAS*. MNRAS, 480, 5625-5644. **2018**, cit. 3
- (18) Shimwell, T. W., Röttgering, H. J. A., Best, P. N., and 69 colleagues *The LOFAR Two-metre Sky Survey. I. Survey description and preliminary data release*. A&A, 598, A104. **2017**, cit. 129

- (19) Sobral, David, Matthee, Jorjyt, Best, Philip, and 6 colleagues *The CALYMHA survey: Ly $\alpha$  luminosity function and global escape fraction of Ly $\alpha$  photons at  $z = 2.23$* . MNRAS, 466, 1242-1258. **2017**, cit. 50
- (20) Calistro Rivera, G., Williams, W. L., Hardcastle, M. J., and 20 colleagues *The LOFAR window on star-forming galaxies and AGNs - curved radio SEDs and IR-radio correlation at  $0 < z < 2.5$* . MNRAS, 469, 3468-3488. **2017**, cit. 33
- (21) Oonk, J. B. R., van Weeren, R. J., Salas, P., and 5 colleagues *Carbon and hydrogen radio recombination lines from the cold clouds towards Cassiopeia A*. MNRAS, 465, 1066-1088. **2017**, cit. 17
- (22) Salas, P., Oonk, J. B. R., van Weeren, R. J., and 6 colleagues *LOFAR observations of decameter carbon radio recombination lines towards Cassiopeia A*. MNRAS, 467, 2274-2287. **2017**, cit. 13
- (23) Clarke, A. O., Heald, G., Jarrett, T., and 40 colleagues *LOFAR MSSS: Discovery of a 2.56 Mpc giant radio galaxy associated with a disturbed galaxy group*. A&A, 601, A25. **2017**, cit. 8
- (24) Williams, W. L., van Weeren, R. J., Röttgering, H. J. A., and 32 colleagues *LOFAR 150-MHz observations of the Boötes field: catalogue and source counts*. MNRAS, 460, 2385-2412. **2016**, cit. 80
- (25) Shimwell, T. W., Luckin, J., Brüggén, M., and 28 colleagues *A plethora of diffuse steep spectrum radio sources in Abell 2034 revealed by LOFAR*. MNRAS, 459, 277-290. **2016**, cit. 33
- (26) Varenus, E., Conway, J. E., Martí-Vidal, I., and 16 colleagues *Subarcsecond international LOFAR radio images of Arp 220 at 150 MHz. A kpc-scale star forming disk surrounding nuclei with shocked outflows*. A&A, 593, A86. **2016**, cit. 24
- (27) Smith, D. J. B., Best, P. N., Duncan, K. J., and 27 colleagues *The WEAVE-LOFAR Survey*. SF2A-2016: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics, 271-280. **2016**, cit. 22
- (28) Jackson, N., Tagore, A., Deller, A., and 76 colleagues *LBCS: The LOFAR Long-Baseline Calibrator Survey*. A&A, 595, A86. **2016**, cit. 9
- (29) Heald, G. H., Pizzo, R. F., Orrú, E., and 147 colleagues *The LOFAR Multifrequency Snapshot Sky Survey (MSSS). I. Survey description and first results*. A&A, 582, A123. **2015**, cit. 70
- (30) Varenus, E., Conway, J. E., Martí-Vidal, I., and 25 colleagues *Subarcsecond international LOFAR radio images of the M82 nucleus at 118 MHz and 154 MHz*. A&A, 574, A114. **2015**, cit. 18
- (31) Moldón, J., Deller, A. T., Wucknitz, O., and 82 colleagues *The LOFAR long baseline snapshot calibrator survey*. A&A, 574, A73. **2015**, cit. 13
- (32) Oonk, J. B. R., van Weeren, R. J., Salgado, F., and 100 colleagues *Discovery of carbon radio recombination lines in absorption towards Cygnus A*. MNRAS, 437, 3506-3515. **2014**, cit. 16

## Conference proceedings

- (1) Nyland, Kristina, Harwood, Jeremy, Jagannathan, Preshanth, and 9 colleagues *Revolutionizing Our Understanding of AGN Feedback and its Importance to Galaxy Evolution in the Era of the Next Generation Very Large Array*. American Astronomical Society Meeting Abstracts #231, 231, 342.28. **2018**, cit. 0
- (2) **Morabito**, L., Deller, A., Moldón, J., and 3 colleagues *A LOFAR survey of spatially resolved Ultra Steep Spectrum sources*. Proceedings of “The many facets of extragalactic radio surveys: towards new scientific challenges” (EXTRA-RADSUR2015). 20-23 October 2015. Bologna, 71. **2015**, cit. 0
- (3) **Morabito**, Leah K., Deller, Adam, Oonk, J. B. R., Röttgering, Huub, and Miley, George *Spatially resolved studies of extragalactic jets in high redshift radio galaxies*. Extragalactic Jets from Every Angle, 313, 231-235. **2015**, cit. 0
- (4) Toribio, **M. C.**, Morabito, L. K., Oonk, J. B. R., and 3 colleagues *Radio Recombination Line studies on M82 from LOFAR HBA observations*. Galaxies in 3D across the Universe, 309, 350-350. **2015**, cit. 0
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