

# Marika LEPORE

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## Contact Information

Address INAF - Astrophysics Observatory of Arcetri, Largo Enrico Fermi 5, 50125, Florence, Italy

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## Scientific Career

2024–  
Ongoing **INAF - Astrophysics Observatory of Arcetri**, *Post Doctoral position*.

Project “The origin of cool cores and the evolution of BCGs in galaxy clusters” in GTO Grants 2023 INAF

## Education

2021–2024 **University of Florence**, *Ph.D. in Physics and Astronomy*.

Thesis title “The evolution of Large Scale Structures: from Clusters to Protoclusters”

2019–2021 **“La Sapienza” University of Rome**, *Master’s Degree in Astronomy and Astrophysics*.

Thesis title “AGN Activity in Dense Environment”

Vote 110/110 cum laude

2016–2019 **“La Sapienza” University of Rome**, *Bachelor’s Degree in Physics*.

Thesis title “Mappe del Cielo nelle Microonde e Anisotropie del Fondo Cosmico”

Vote 105/110

2011–2016 **Liceo Scientifico Statale “G. Pellecchia”**, *Cassino (FR)*.

Qualification High School Diploma

Vote 100/100

## Ph.D. Schools

3-8 October 2021 Scientific Communication in Astronomy – Bertinoro University Center, Bologna, Italy

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## Selected Talks at International Conferences

- 10-13 September 2024 **CLUSTER4 - Trieste, Italy**, *"The evolution of Large Scale Structures: from Clusters to Protoclusters "*.
- 15-19 July 2024 **Galaxies and diffuse gas in large-scale overdense environments at high redshift - Sexten, Italy**, *"Proto-ICM and nuclear activity in large scale dense environments at  $z > 2$ "*.
- 24-28 June 2024 **First Structures in the Universe - Paris, France**, *"Nuclear activity in galaxy protoclusters at  $z \sim 2$ "*.
- 02-04 October 2023 **12th Young Researcher Meeting - Rome, Italy**, *"Unveiling the nature of the Spiderweb protocluster: a cool core cluster in the making"*.
- 25-29 September 2023 **A journey through galactic environments from the halo assembly bias to the satellite quenching - Porto Ercole, Italy**, *"Unveiling the nature of the Spiderweb protocluster: a cool core cluster in the making"*.
- 11-15 September 2023 **109° Congresso Nazionale della Società Italiana di Fisica - Fisciano, Italy**, *"The Spiderweb Protocluster"*.
- 6-9 December 2022 **Multi-phase, Multi-temperature and Complex: how AGN feedback shapes the nature of the circum-galactic and halo gas in galaxy groups - Garching, Germany**, *"Detailed analysis of the Spiderweb proto-ICM"*.
- 20-23 September 2022 **CLUSTER3 - Bologna, Italy**, *"Detailed analysis of the Spiderweb proto-ICM"*.
- 25-29 July 2022 **Hot Topics in Astrophysics - Sexten, Italy**, *"Detailed analysis of the Spiderweb proto-ICM"*.
- 23-27 May 2022 **AGN XIV Renaissance of Black Holes and Galaxies - Florence, Italy**, *"Mass assembly and AGN activity in the dense environment of XDCPJ0044-2033"*.

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## Visits to other research institutes

- 15 May-25 August 2024 **ESO - Garching, Germany**, *"ESO early career visitor programme in Garching"*.  
Analysis of 27 hours of KMOS data from P112 cycle of observations (PI: P. Popesso) on the high-redshift galaxy clusters XDCPJ0044.0-2033
- 5-9 February 2024 **IASF - Palermo, Italy**, *"Reduction and analysis of Abell 2667 XMM/RGS data"*.
- 7-12 March 2022 **Astronomical Observatory of Trieste - Trieste, Italy**, *"Discussion of Chandra proposals AO24 and diffuse emission in the Spiderweb protocluster"*.

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## Publications

- **Lepore M.**, Pinto C., Tozzi P., Gaspari M., Gastaldello F., Liu A., Rosati P., van Weeren R., Cresci G., Iani E., Rodighiero G., *Cooling rate and turbulence in the intracluster medium of the cool-core cluster Abell 2667*, e-print arXiv:2410.16831, submitted to *Astronomy & Astrophysics*
- **Lepore M.**, Di Mascolo L., Tozzi P., Churazov E., Mroczkowski T., Borgani S., Carilli C., Gaspari M., Ginolfi M., Liu A., Pentericci L., Rasia E., Rosati P., Röttgering H. J. A., Anderson C. S., Dannerbauer H., Miley G., Norman C., *Feeding and feedback processes in the Spiderweb proto-intracluster medium*, *Astronomy & Astrophysics*, 682, A186, 2024
- **Lepore M.**, Bongiorno A., Tozzi P., Travascio A., Zappacosta L., Merlin E. & Fassbender R., *Mass assembly and active galactic nucleus activity at  $z \gtrsim 1.5$  in the dense environment of XDCPJ0044.0-2033*, *Astronomy & Astrophysics*, 668, A123, 2022
- Grishin K. A., Mei S., Chilingarian I. V., **Lepore M.** et al., *Spectroscopic confirmation of the galaxy clusters CARLA J0950+2743 at  $z=2.363$  and CARLA-Ser J0950+2743 at  $z=2.243$* , e-print arXiv:2409.02168, accepted by *Astronomy & Astrophysics*
- Tozzi P., Gilli R., Liu A., Borgani S., **Lepore M.** et al., *The 700 ks Chandra Spiderweb Field II. Evidence for inverse-Compton and thermal diffuse emission in the Spiderweb galaxy*, *Astronomy & Astrophysics*, 667, A134, 2022

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## Evaluation Tasks

2023 Referee ALMA Cycle 10th proposals

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## Languages

Italian **Native Speaker**  
English **B1/2-Independent user**

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## Computer Skills

Text software LaTeX, Microsoft Office, Apple Softwares (e.g. Keynote, Pages)  
Scientific software Xspec, IRAF, QFitsView, fv FITS Viewer, SAOImageDS9, Chandra Interactive Analysis of Observations (CIAO), CASA Simulator, SPEX, Science Analysis System (SAS)  
Programming languages C, Python  
Data Reduction and Analysis Experience in X-ray and infrared data reduction and analysis, using observational data from Chandra, XMM-Newton, HST, and KMOS spectroscopic data.