

Matteo Nurisso, Ph.D.

✉ matteo.nurisso@gmail.com

🐦 @MatteoNurisso

🌐 <https://mnurisso.github.io/>

🌐 <https://www.linkedin.com/in/matteo-nurisso/>

🆔 <https://orcid.org/0000-0002-5962-0680>

🐙 @mnurisso

Employment

- 2024 – present 📌 **Assegno di ricerca Post Dottorale (Post-Doc)** Consiglio Nazionale delle Ricerche, Institute of Atmospheric Sciences and Climate (CNR-ISAC), Turin.
Topic: EPOCHAL project about paleoclimate simulations and code development of AQUA in the Destination Earth project.
- 2022 – 2024 📌 **Assegno di ricerca professionalizzante** Consiglio Nazionale delle Ricerche, Institute of Atmospheric Sciences and Climate (CNR-ISAC), Turin.
Topic: Teleconnections diagnostic and code development of the framework for the AQUA code in the Destination Earth project.

Education

- 2018 – 2022 📌 **Ph.D., Scuola Internazionale di Studi Superiori Avanzati (SISSA)** Astrophysics and Cosmology.
Thesis title: *Particles acceleration with Magnetic Reconnection in large scale MHD simulations*.
Supervisors: Annalisa Celotti and Andrea Mignone
- 2014 – 2018 📌 **Master Degree , University of Turin** Astrophysics and Theoretical Physics.
Thesis title: *Anisotropic Cosmic Ray transport in the galaxy with PLUTO*.
Supervisors: Andrea Mignone and Nicolao Fornengo
- 2011 – 2014 📌 **Bachelor Degree , University of Turin** Physics.
Thesis title: *The Heisenberg model and the Bethe Ansatz*.
Supervisor: Marco Billó

Research Publications

- 1 **Nurisso, M.**, Celotti, A., Mignone, A., Bodo, G., & Surano, A. (*To be submitted*). Particles acceleration with magnetic reconnection in large scale mhd simulations: II. spectra update. *MNRAS*.
- 2 **Nurisso, M.**, Celotti, A., Mignone, A., & Bodo, G. (2023). Particles acceleration with magnetic reconnection in large scale RMHD simulations: I. current sheet identification and characterization. *Monthly Notices of the Royal Astronomical Society*. [doi:10.1093/mnras/stad1348](https://doi.org/10.1093/mnras/stad1348)
- 3 **Nurisso, M.**, Celotti, A., Mignone, A., & Bodo, G. (2022). Particle acceleration via magnetic reconnection in large-scale MHD jet simulations. (Vol. 17, pp. 54–55). [doi:10.1017/s1743921323000935](https://doi.org/10.1017/s1743921323000935)
- 4 **Nurisso, M.** (2022). *Particles acceleration with magnetic reconnection in large scale mhd simulations* (Ph.D thesis). Retrieved from <https://hdl.handle.net/20.500.11767/130671>
- 5 **Nurisso, M.** (2018). Anisotropic cosmic ray transport in the galaxy with pluto. Retrieved from <https://api.semanticscholar.org/CorpusID:221133901>



Projects

- 2024 – present 📌 Participation as Post-Doc in the PRIN: Earth system modeling of PaleOClimatic HyperthermALS (EPOCHAL) founded by the NextGeneration EU.







Projects (continued)

- 2022 – present  Participation in the WP7 of the Destination Earth Climate Digital Twin project, a flagship initiative of the European Commission.





Code contributions

-  AQUA (Application for Quality assessment and Uncertainty quAntification). Developer of the framework and the teleconnections and timeseries diagnostics.
-  PLUTO code. Developer of a module for magnetic reconnection particles acceleration in Magneto-Hydrodynamical simulations.

Conferences and Hackatons


- 2024  **EGU General Assembly 2024** (Vienna, Austria) (Abstract: <https://meetingorganizer.copernicus.org/EGU24/EGU24-10935.html>)
-  **EC-Earth General Assembly** (De Bilt, Netherlands)
- 2023  **2nd Destination Earth User eXchange** (Bonn, Germany) (Poster from AQUA code: <http://bit.ly/aqua-poster>)
-  **NextGEMS Cycle 3 Hackathon** (Madrid, Spain)
-  **Destination Earth Hackathon @ BSC** (Barcelona, Spain)
- 2022  **7th Heidelberg International Symposium on High-Energy Gamma-Ray Astronomy** (Barcelona, Spain)
-  **Active Galactic Nuclei XIV: The Renaissance of Black Holes and Galaxies** (Florence, Italy)
- 2020  **EuroScience Open Forum 2020** (Trieste, Italy)
- 2019  **International Conference of Physics Students 2019** (Cologne, Germany)
- 2017  **International Conference of Physics Students 2017** (Turin, Italy)

Skills



- Languages  Strong reading, writing and speaking competencies for English and Italian.
 Moderate reading, writing and speaking competencies for French.
- Coding  c, c++, Python (xarray, dask), Fortran
- Software  Git, Github, Linux, Slurm, EC-Earth ESM code, CDO, CI/CD, MPI, OpenMP, Cuda, IDL, Visit, Html, PLUTO MHD code
- Scientific  Climate simulations, Magnetohydrodynamic simulations, Academic research, \LaTeX typesetting and publishing.

Miscellaneous Experience



Teaching

- 2017 – 2018  **Tutor** of "Introduzione alla programmazione", University of Turin






Workshops

- 2023  **CodeRefinery workshop**: Introduction to Git, Collaborative distributed version control, Reproducible and tested code and research
- 2022  **SCtrain training week**: Introduction to Parallel Programming






Miscellaneous Experience (continued)

- 2021  **Machine Learning Lectures** Cluster of Galaxies IFPU group
- 2020  **Deep Learning Day** AI Student Society

Science Communication

- 2022  **Social media management and Personal Branding**
-  **Science Communication:** the use of objects and easy experiments in face-to-face events
- 2021  **Science Communication** mini-course
- 2019  **Training and Sharing:** Best practices in Science Communication
-  **Science Dialogues:** training course on Science Communication

Outreach

- 2020-2022  **Trieste Next** volunteer
- 2018 – 2022  **Sissa4Schools** volunteer
- 2018-2021  **SISSA Student Day** speaker
- 2017  **ICPS** volunteer (International Conference of Physics Students)
- 2013 – present  President (since 2024) of **Silviadizenzero**, active in Climate Science outreach