

## Enrico Arnone – Curriculum Vitae, June 2021

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### BIO-SKETCH

Enrico Arnone is Associate Professor in climate and atmospheric physics at the Department of Physics, University of Torino, since 2018, and affiliated to CNR-ISAC and INFN. Graduated cum laude in Physics, University of Torino, he took his PhD in Atmospheric Physics in 2007 at the University of Leicester (U.K.), with a thesis on “The response of the middle atmosphere to regional ozone perturbations” in the FP5 People (now Marie Skłodowska-Curie) research training network “Coupling of Atmospheric Layers”. He was ERG Marie Skłodowska-Curie Fellow at the Faculty of Industrial Chemistry, University of Bologna in 2007-2010, P.I. of the project “ARIA - An Investigation of the middle atmosphere response to impulsive ozone perturbations”. In 2011-2013 he was European Space Agency Changing Earth Fellow at CNR-ISAC, Bologna, P.I. of the project “CHIMTEA - Chemical Impact of Thunderstorms on Earth's Atmosphere”, then continued as researcher in 2014-2015. In winter 2012 he was researcher on climate-related measurements at the XXVIII Italian expedition to Antarctica. In 2017-2018 he was research fellow at CNR-ISAC, Torino. In 2018-2021 he was Researcher (RUTb) at the Department of Physics, Torino.

He has published 47 publications (36 indexed) and contributed with over 70 communications to conferences and schools (14 invited). He holds teaching habilitation in FIS/06 and GEO/12 and his teaching at the University of Torino includes Physics of the Atmosphere (since 2018) and Energy and Climate (scheduled from 2021).

### SCIENTIFIC RESEARCH

Enrico Arnone has a broad experience on atmospheric and climate modelling and observations, with a particular interest on the coupling of the stratosphere, thunderstorms and climate. Research topics include the relationship of lightning processes with various layers of the atmosphere, with climate and climate extremes. Climate change and climate extremes in Europe and in mountain regions of the globe. Variability of the stratosphere and of the polar region and their relationship to mid-latitude climate. Climate in the past centuries.

A full list of publications can be found here: <https://scholar.google.it/citations?hl=en&user=TpJEqVUAAAAJ>

Ongoing research publications include:

- Pepin et al. (2021) A review of climate change in mountain regions of the world in the past century, *submitted following invitation* to Reviews in Geophysics. IF: 21.4
- Rubinetti et al. (2021) Historical tidal variability in Venice and its implications for decadal predictions of acqua alta events, *submitted* to the International Journal of Climatology. IF: 3.6.
- Weigel et al. (2020) Earth System Model Evaluation Tool (ESMValTool) v2.0 – diagnostics for extreme events, regional and impact evaluation and analysis of Earth system models in CMIP, *under review* for Geoscientific Model Development, <https://gmd.copernicus.org/preprints/gmd-2020-244/>. IF 5.2
- Arnone, E. et al. (2020). Climatology of transient luminous events and lightning observed above Europe and the Mediterranean Sea, *Surveys in Geophysics*, 41, 2. IF: 5.5.

### QUALIFICATIONS

- 11/7/2018 – 11/7/2027 Abilitazione scientifica nazionale per professore di II fascia, 02/C1, ASTRONOMIA, ASTROFISICA, FISICA della TERRA e dei PIANETI, SSD FIS/06
- 7/2/2014 – 7/2/2023 Abilitazione scientifica nazionale per professore di II fascia, 04/4, GEOFISICA
- 27/12/2013 – 27/12/2022 Abilitazione scientifica nazionale per prof. di II fascia, 02/C1, FIS/06
- 23/12/2016 researcher habilitation “III livello”, concorso di eccellenza CNR, Osservazione della Terra/remote sensing, shortlisted and first excluded (91,7/100). Permanent position awarded in May 2018 (declined).

- Further researcher habilitation “III livello” were obtained in 2011.

## AWARDS/FELLOWSHIPS

- 2011-2013: European Space Agency Changing Earth Fellowship
- 2007-2010: Marie-Sklodowska-Curie ERG Fellowship
- July 2010: Visiting Grant, INPE-National Institute of Space Physics, Sao-Joze dos Campos, Brazil
- February 2010: Visiting Grant, LAPBIAT project, Sodankyla Geophysical Observatory, Finland
- 2009: Journal Highlight by Plasma Sources and Technology for the publication Arnone et al, 2009 <https://iopscience.iop.org/journal/0963-0252/page/Highlights%20of%202009>

## PROJECTS/AFFILIATIONS

- Since 2021: participation to the GAMMA-FLASH project funded by the Italian Space Agency on high-energy emissions from thunderstorms
- Since 2020: member of the international scientific team developing the TOTEM instrument to fly onboard ISS on emissions from thunderstorms (currently funded as feasibility study in Denmark)
- Since 2020: member of the CNR-ISAC group on the EC-Earth Earth system model
- Since 2018: affiliated to INFN scientific team for the mini-EUSO experiment on lightning processes from space
- Since 2018: affiliated to INFN team for the AUGER observatory on observation of lightning processes
- Since 2018: member of the Cosmo-Geophysics group at the Department of Physics on paleoclimate and solar activity from meteorites at the Laboratory of Monte dei Cappuccini (INAF/UniTo).
- Since 2017: affiliated to CNR-ISAC Climate Dynamics and Variability Research Unit (DIVAC)
- Since 2017: member of the developer team of the ESMValTool project adopted by CMIP/IPCC
- 2017-2018: participation to the EU/Copernicus Climate Change Service MAGIC-C3S 34A LOT 2 “Development of C3S software for data analysis from climate models” project.
- 2017-2018: participation to the PNR project “NextData - A national system for the retrieval, storage, access and diffusion of environmental and climate data from mountain and marine areas”
- 2011-2013: P.I. project European Space Agency “CHIMITEA - Chemical Impact of Thunderstorms on Earth's Atmosphere” coupling stratospheric processes, thunderstorms and climate
- 2009-2013: Coordinator of the European Eurosprite network on lightning processes in the upper atmosphere
- 2007-2015: member of the Quality Working Group of ESA MIPAS-ENVISAT space instrument
- 2007-2010: P.I. of the project FP7 ERG “ARIA - An Investigation of the middle atmosphere response to impulsive ozone perturbations”, on observations from ESA ENVISAT and global atmospheric models
- 2007: Postgraduate Training Coordinator, FP6 Marie Curie Centre of Excellence in Training “SPARTAN”

## REFEREEING:

- Atmospheric Chemistry and Physics, Atmospheric Research, Geophysical Research Letters, International Journal of Remote Sensing, Journal of Atmospheric and Solar-Terrestrial Physics, Journal of Geophysical Research

## ACADEMIC RESPONSIBILITIES

- Teaching at the University of Torino: Atmospheric Physics (since 2018), Physics with laboratory (since 2018), Electromagnetism and optics (2019), Energy and Climate (scheduled from 2021). Edu-meter scores range from 82-85/100 (Physics with laboratory) to 84-95/100 (Atmospheric Physics).
- Italian supervisor of PhD student Adriana Carolina, Vasquez, *co-tutela* with Industrial University of Santander (Colombia) on lightning processes
- Advisor for several undergraduate students and external committee member for the defense of 3 PhDs
- Member of the University of Torino/APRE board on Climate, Energy and Mobility, Horizon Europe
- Member of the Outreach and Public Engagement committee, Department of Physics