

Chiara Aquino, PhD

POST-DOC RESEARCHER · CMCC FOUNDATION - EURO-MEDITERRANEAN CENTER ON CLIMATE CHANGE

Education

University of Edinburgh (UK)

July 2023

PHD IN ATMOSPHERIC AND ENVIRONMENTAL SCIENCES

- **Research topics:** forest degradation, biomass mapping, change detection, land use/land cover change
- **Thesis:** "Mapping small-scale tropical forest disturbances using SAR and optical satellite imagery"
- **Supervisor:** Prof. Edward Mitchard

University of Edinburgh (UK)

July 2017

BACHELOR OF SCIENCE WITH HONOURS IN PHYSICS, FIRST CLASS

- **Specialisation Areas:** cosmology, relativity and particle physics
- **Thesis:** "Large scale structure of the Universe"
- **Supervisor:** Dr. Shadab Alam

University of Bologna (Italy)

July 2012

BACHELOR OF ARTS IN CLASSICAL LANGUAGES AND LITERATURES, 110/110 CUM LAUDE

- **Specialisation Areas:** Latin, ancient Greek and ancient philosophy
- **Thesis:** "The moon and the two ways. Parmenides' cosmological poem and the modern scientific thought"
- **Supervisor:** Prof. Renzo Tosi

Professional Experience

November 2023 - present

Post-Doc Researcher on Earth Observation, CMCC Foundation
Mapping land degradation processes and terrestrial ecosystem dynamics using remote sensing and field data.

January 2023 - September 2023

Environmental Data Analyst, Friends of the Earth UK
Using geospatial analysis and environmental data sets to support local activists campaigning for social and environmental justice at the local and national level.

October - December 2022

Advanced Earth Fellow, Edinburgh Earth Initiative
Managed a team of postgraduate students to foster interdisciplinary collaborations between researchers at the University of Edinburgh on climate change and health.

February - March 2022

GIS Consultant, Global Witness
Analysed satellite data to produce a report on deforestation due to the expansion of rubber plantations in Western Africa as a case study for the European Commission.

February - April 2018

Software Developer, CREATIVenergie
Built an Android application for the Smart Biogas Network to support sustainable energy projects in Sub-Saharan Africa.

Publications

PUBLISHED

- Aquino, C.**, Mitchard, E.T., McNicol, I. et al. (2022). “Reliably Mapping Low-intensity Forest Disturbance Using Satellite Radar Data”. *Frontiers in Forests and Global Change*, 5. doi:10.3389/ffgc.2022.1018762
- Carstairs, H., Mitchard, E.T., McNicol, I., **Aquino, C.** et al. (2022). “Sentinel-1 Shadows Used to Quantify Canopy Loss from Selective Logging in Gabon”. *Remote Sensing*, 14(17), 4233. doi:10.3390/rs14174233
- Carstairs, H., Mitchard, E.T., McNicol, I., **Aquino, C.** et al. (2022). “An Effective Method for InSAR Mapping of Tropical Forest Degradation in Hilly Areas”. *Remote Sensing*, 14(3), 452. doi:10.3390/rs14030452
- Aquino, C.**, Mitchard, E., McNicol, I. et al. (2021). “Using Experimental Sites in Tropical Forests to Test the Ability of Optical Remote Sensing to Detect Forest Degradation at 0.3-30 M Resolutions”. In *2021 IEEE International Geoscience and Remote Sensing Symposium IGARSS* (pp. 677-680). doi:10.1109/IGARSS47720.2021.9553389
- McNicol, I. M., Mitchard, E. T., **Aquino, C.**, Burt, A. et al. (2021). “To what extent can UAV photogrammetry replicate UAV LiDAR to determine forest structure? A test in two contrasting tropical forests.” *Journal of Geophysical Research: Biogeosciences*, 126(12), e2021JG006586. doi:10.1029/2021JG006586
- McNicol, **Aquino, C.**, Burt, A. et al. (2021). “The Forest Degradation Experiment (FODEX)” in *Proceedings of the SilviLaser Conference 2021*, (pp. 240–242). doi:10.34726/wim.1993
- Akerib, D.S., Alsum, S., **Aquino, C.**, et al. (2017) “First searches for axions and axion-like particles with the LUX experiment.” *Phys. Rev. Lett.*, 118, 261301. doi:10.1103/PhysRevLett.118.261301

IN REVIEW

- Aquino C.**, Mitchard E.T., McNicol, I. et al. “Detecting Selective Logging in Tropical Forests with Optical Satellite Data: An Experiment in Peru Show Texture at 3 m Gives Best Results” in *Remote Sensing in Ecology and Conservation*.

Awards, Fellowships, & Grants

2018	EPP Award - Most Enterprising Green Graduate , Bright Green Business	
2016	Edinburgh Award - UK summer work experience and volunteering , University of Edinburgh	
2016	Career Development Internship Scholarship , School of Physics and Astronomy, University of Edinburgh	£ 1,000
2016	Dean’s Vacation Scholarship , College of Science and Engineering, University of Edinburgh	£ 1,000
2010	EU-US Atlantis Cooperation Programme Scholarship , EU-US Atlantis Programme	€ 6,000

Presentations

- Aquino, C.**, Balzarolo, M., Florea S., Nita M.D., Chiriaco M.V. and Santini M. April 2024. *Advancing Forest Cover Change Mapping for SDG 15: A Novel Approach Using Copernicus Data Products*. Oral presentation: EGU24, Vienna, Austria.
- Aquino, C.**, Mitchard, E.T., McNicol, I. et al. May 2022. *Testing a new method of mapping tropical forest degradation using Sentinel-1 Data*. Oral presentation: ESA Living Planet Symposium, Bonn, Germany.
- Aquino, C.**, Mitchard, E.T., McNicol, I. et al. July 2021. *Using experimental sites in tropical forests to test the ability of optical remote sensing to detect forest degradation at 0.3 - 30 m resolutions*. Oral presentation: International Geoscience and Remote Sensing Symposium (IGARSS), Bruxelles, Belgium.
- Aquino, C.**, Georgiou, S. and Carstairs H. November 2020. *Ethics, carbon and virtual conferences*. Departmental seminar: School of GeoSciences, University of Edinburgh, UK.

Mitchard E.T., McNicol, I., **Aquino, C.** and Carstairs H. October 2019. *Testing the Ability of TanDEM-X Data to Detect Forest Degradation and Regrowth in Tropical Forests*. Oral presentation: DLR Oberpfaffenhofen, Germany.

Teaching Experience

School of GeoSciences, University of Edinburgh

- 2022-2023 **Introduction to Ecological and Environmental Sciences**, Teaching Assistant
- 2022-2023 **Dissertation in Geology and Physical Geography**, Lecturer and Teaching Assistant
- 2022-2023 **Spatial Modelling and Analysis**, Teaching Assistant
- 2020-2023 **Key Methods in Physical Geography**, Teaching Assistant
- 2021-2022 **Physical Geography**, Teaching Assistant
- 2020-2021 **Environmental Geography**, Teaching Assistant
- 2018-2019 **Social and Cultural Geography**, Teaching Assistant
- 2018-2019 **Practical Geochemistry and Data Analysis**, Teaching Assistant
- 2018-2019 **Geoscience Outreach**, Teaching Assistant
- 2018-2019 **Welcome Week Computing Lab**, Lab Demonstrator
- 2018-2019 **UNIX/LINUX Practical**, Lab Demonstrator
- 2018-2019 **Our Coding Club**, Workshops on Python, Google Earth Engine and JavaScript

Fieldwork

Field research campaigns in Madre de Dios (Peru) and Ogooué-Ivindo (Gabon)

DATA COLLECTION FOR PHD RESEARCH/FOREST DEGRADATION EXPERIMENT (FODEX)

May 2019- September 2021

Three campaigns, two months each (+ two campaigns organised remotely)

- Set-up of forest plots and forest census
- Optical and LiDAR UAV survey
- GPS survey and ground truth
- Collaboration with local NGO AIDER - Asociación para la Investigación y Desarrollo Integral

Training and Accreditation

Jan 2022 **Associate Fellow of the Higher Education Academy (AFHEA)**, Edinburgh (UK)

In recognition of the attainment against the UK Professional Standards Framework for teaching and learning support in higher education

Aug 2018 **Pilot Training for DT18 and DT26 Drones**, DELAIR, Toulouse (France)

Languages

Italian: Native

English: Full professional proficiency

Spanish: Full professional proficiency

French: Working proficiency

Computer Skills

Programming Languages: Python, R, JavaScript, SQL

Data Analysis Software: QGIS, ArcGIS, Google Earth Engine

Operating Systems: Unix, Windows, Scientific Linux