Dr. Assia **Arouf**

Postdoctoral Research Scientist | Columbia University | NASA–GISS

About me

I am currently a Postdoctoral Research Scientist at the Center for Climate Systems Research (CCSR), Columbia University and NASA Goddard Institute for Space Studies (GISS) in the city of *New York*.

I am broadly interested in Earth's climate system, with a focus on clouds. My research aims to better understand the cloud radiative effect and cloud feedback. I typically work with satellite observations, in combination with radiative transfer codes and climate models, aiming to improve climate projections.

Contact

Born on 9th March 1995

AroufAssia@hotmail.com

aa5396@columbia.edu

+1 (917)–463–8681

+33 7 53 29 26 58

2880 Broadway,
New York, NY 10025

Website/Assia-Arouf

Linkedin/Assia-Arouf

ResearchGate/Assia-Arouf

ORCID/Assia-Arouf

Languages

English - Fluent

French - Native Language

Berber - Native Language

Arabic (Algerian)- Fluent

Spanish - Learning

Education

2019-2023 — **PhD Degree** — Paris, France

Sorbonne Université
Laboratoire de Météorologie Dynamique (LMD)

Surface longwave cloud radiative effect derived from space lidar observations: application in the Arctic (link): Instrumentation, remote sensing, observation and space techniques for the atmosphere, ocean and climate, radiative transfer, Earth radiation budget, data processing.

2017-2019 — **Master Degree** — Paris, France

Université Paris Cité
Institut de Physique du Globe de Paris (IPGP)

Fundamentals of Remote Sensing (link): Electromagnetic radiation, atmosphere and climate system, radiative transfer, satellite observations, spatial techniques.

2013-2017 — **Bachelor Degree** — Blida, Algeria

Blida University
Institut d'Aéronautique et des Etudes Spatiales (IAES)

Bachelor Degree and first year of Master; Physics, Mathematics, Electromagnetic, Navigation.

Work Experiences

10/2023–today — **Postdoctoral Research Scientist** — New York, USA

Columbia Climate School
CCSR, NASA-GISS

Determine the impact of an improved representation of low-cloud feedbacks on the estimated climate sensitivity (ECS) in the NASA Goddard Institute for Space Studies Earth System Model (NASA-GISS ESM), obtained via observational constraints on most atmospheric physical processes.

06/2023–08/2023 — **Postdoctoral Researcher** — Paris, France

Laboratoire de Météorologie Dynamique
LMD–IPSL, CNRS, Ecole Polytechnique

Comparison of the longwave cloud radiative effect derived from CALIPSO observations with the longwave cloud radiative effect simulated by CMIP6 climate models over the last 17 years in the polar regions.

09/2019–04/2023 — **PhD Research** — Paris, France

Laboratoire de Météorologie Dynamique
IPSL, Ecole Polytechnique

Development of surface longwave cloud radiative effect from theoretical parameterizations derived from radiative transfer simulations that involve different humidity and temperature profiles from reanalysis, and five cloud properties derived from space lidar observations. Validation of the surface longwave cloud radiative effect by comparing it to existing satellite-derived products globally on instantaneous collocated data at footprint scale and on global averages as well as to ground-based observations at specific locations.

Awards

- **Second place for a poster presentation at the 102nd American Meteorological Society Annual Meeting,** January 2022.

Skills and Strengths

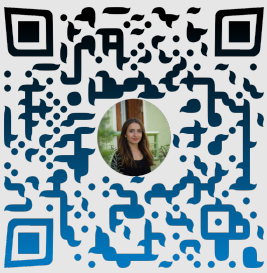
Passion for Learning New Things
Curiosity
Ability to Plan and Organize
Autonomy
Adaptability
Flexibility
Problem Solving
Team Working
Leadership
Good Communication
Good Listener

Other Interests

- Sewing
- Embroidery
- Cooking
- Chess
- Travels
- Movies
- Badminton

Check my website

Check my website via the QR below.



Publications

Journal Article 2024 — **Polar Low Circulation Enhances Greenland's West Coast Cloud Surface Warming**, Lac, J., Chepfer, H., **Arouf, A.**, Shupe, M. D., Gallagher, M. R., *Journal of Geophysical Research: Atmospheres, 129, e2023JD040450*, doi.org/10.1029/2023JD040450

Journal Article 2024 — **Surface cloud warming increases as late Fall Arctic sea ice cover decreases**, **Arouf, A.**, Chepfer, H., Kay, J. E., L'Ecuyer, T. S., Lac, J., *Geophysical Research Letters, 51, e2023GL105805*, 10.1029/2023GL105805

PhD thesis 2023 — **Surface longwave cloud radiative effect derived from space lidar observations : application in the Arctic.**, **Arouf, A.**, , *Atmospheric and Oceanic Physics, Sorbonne Université*, www.theses.fr/2023SORUS173

Journal Article 2022 — **The Surface Longwave Cloud Radiative Effect derived from Space Lidar Observations**, **Arouf, A.**, Chepfer, H., Vaillant de Guélis, T., Chiriaco, M., Shupe, M. D., Guzman, R., Feofilov, A., Raberanto, P., L'Ecuyer, T. S., Kato, S., and Gallagher, M. R., *Atmos. Meas. Tech., 15, 3893–3923*, 10.5194/amt-15-3893-2022

Journal Article — **Variability and trends in cloud properties over 17 years from CALIPSO space lidar observations**, Chepfer, H., Chomette, O., **Arouf, A.**, Noel, V., Winker, D., Feofilov, A., *To be submitted soon*,

Journal Article — **Constraining low-level cloud feedback and cloud dependency to environmental factors in CMIP models.**, **Arouf, A.**, Cesana, G. V., Pilewskie, J. A., Ackerman, A., Fridlind, A., Elsaesser, G., *In prep.*,

Conferences, Workshops and Symposiums

Oral Presentations

CloudSat/CALIPSO Science Team Meeting; Feb. 2025; Fort Collins, Co, USA
Constraining Low-Level Cloud Feedback and Cloud Dependency to Environmental Factors in CMIP Models

AGU: *American Geophysical Union*; Dec. 2024; Washington, D.C., USA
Constraining Low-Level Cloud Feedback and Cloud Dependency to Environmental Factors in CMIP Models

EGU: *European Geosciences Union*; April 2023; Vienna
Quantifying surface cloud warming increase as Fall Arctic sea ice cover decreases, 10.5194/egusphere-egu23-2377

EECLAT: *Expecting Earth-Care, Learning from A-train*; Jan. 2023; Banyuls, France
Quantifying surface cloud warming increase as Fall Arctic sea ice cover decreases

EECLAT; Jan. 2022; Remote
Cloud warming effect: A-Train Observations Vs CMIP6 Models

EECLAT; Jan. 2021; Remote
Effect of clouds on surface temperature from space lidar observations

EECLAT; Jan. 2020; Avignon, France
Clouds influence on surface heating in the infrared range on a global scale

Invited Seminars

NASA-GISS; Jan. 2024; New York, USA
Surface longwave cloud radiative effect derived from space lidar observations: An application to the Arctic. Youtube video.

Max-Planck-Institut für Meteorologie; Jul. 2021; Remote
The Surface Longwave Cloud Radiative Effect from Space Lidar Observations

Poster Presentations

***CFMIP**: Cloud Feedback Model Intercomparison Project*; Jun. 2024; Boston, USA
Constraining low-level cloud feedback and cloud dependency to environmental factors in CMIP models

NASA–GSFC Poster Party; Jan. 2024; Greenbelt, USA
Constraining low-level cloud feedback in NASA–GISS model–E using satellite observations

***CFMIP**; Jul. 2023; Paris, France*
Surface cloud warming increases as late Fall Arctic sea ice cover decreases

***IRS**: International Radiation Symposium*; Jul. 2022; Thessalonique, Greece
The Surface Longwave Cloud Radiative Effect derived from Space Lidar Observations

***LPS**: Living Planet Symposium;* May 2022; Bonn, Germany
The Surface Longwave Cloud Radiative Effect derived from Space Lidar Observations

***AMS**: American Meteorological Society*; Jan 2022; Remote
Analysis of Decadal Variations of Global Surface Longwave Cloud Radiative Effect derived from Space Lidar Observations

***WCRP**: World Climate Research Programme*; Sept. 2021; Remote
Analysis of Time Series of Global Surface Longwave Cloud Radiative Effect from Space Lidar Observations

EGU; May 2021; Remote
The Surface Longwave Cloud Radiative Effect from Space Lidar Observations, 10.5194/egusphere-egu21-2064

Community Involvement & Leadership

[2025 - present] **Co-chair of the Networking Committee**; Columbia University Postdoctoral Society (profile).

[2024 - present] **Early Career Scientists representative**; NASA Goddard Institute for Space Studies.

</> Professional Skills

- **Python**: Advanced
- **Space observation processing**: Advanced
- **Radiative transfer simulations**: Advanced
- **Matlab**: Intermediate
- **Unix**: Basic
- **C/C++**: Basic
- **Fortran**: Basic
- **GitHub**: Basic

Potential Recommendation Writers

- **Prof. Hélène Chepfer**: PhD supervisor; chepfer@lmd.ipsl.fr
- **Dr. Grégory Cesana**: Postdoc supervisor; gc2748@columbia.edu