

Dr. Assia Arouf

Postdoctoral Researcher Scientist | Columbia University | NASA-GISS



About me

I am currently a Postdoctoral Researcher 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
- (917)–463–8681
- +33 7 53 29 26 58
- 2880 Broadway,
New York, NY 10025
- Website/Assia-Arouf
- [Linkedin/Assia-Arouf](https://www.linkedin.com/in/Assia-Arouf)
- [ResearchGate/Assia-Arouf](https://www.researchgate.net/profile/Assia-Arouf)
- [ORCID/Assia-Arouf](https://orcid.org/Assia-Arouf)

Languages

- English - Fluent
- French - Native Language
- Berber - Native Language
- Arabic (Algerian)- Fluent
- Spanish - Learning

Education

2019-2023



PhD Degree

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.

Paris, France

2017-2019



Master Degree

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.

Paris, France

2013-2017



Bachelor Degree

Blida University

Institut d'Aéronautique et des Etudes Spatiales (IAES)

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

Blida, Algeria

Work Experiences

10/2023–
today



Postdoctoral Researcher Scientist

Columbia Climate School

CCSR, NASA-GISS

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

New York, USA

06/2023–
08/2023



Postdoctoral Researcher

Centre national de la recherche scientifique

LMD-IPSL, 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.

Paris, France

09/2019–
04/2023



PhD Research

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.

Paris, France

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

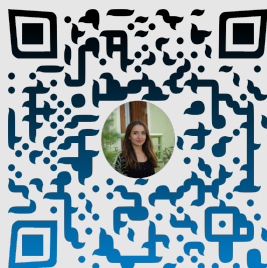
Good Listener

Other Interests







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

Check my website


Check my website via the QR below.



Publications

- Journal Article** **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** **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](https://doi.org/10.1029/2023GL105805)
- PhD thesis** **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** **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](https://doi.org/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**
- EGU*; April 2023; Vienna
Quantifying surface cloud warming increase as Fall Arctic sea ice cover decreases,  [10.5194/egusphere-egu23-2377](https://doi.org/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

**Poster
Presentations**

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: European Geosciences Union; May 2021; Remote

The Surface Longwave Cloud Radiative Effect from Space Lidar Observations,  [10.5194/egusphere-egu21-2064](https://doi.org/10.5194/egusphere-egu21-2064)

</> 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 V. Cesana**: Postdoc supervisor; ✉ gc2748@columbia.edu