

Lucas J. Sterzinger

Curriculum Vitae

Address removed for Public CV

<https://github.com/lsterzinger>

INTEREST STATEMENT

I am an Atmospheric Science PhD candidate at UC Davis, graduating 12/2022. My research focuses on numerical modelling of clouds and precipitation processes. I am passionate about open source and open science. I am involved in the Kerchunk Python library, which makes existing cloud-hosted datasets more accessible. I want to work and do research at the intersection of geoscience, data science, and software development.

EDUCATION

PhD, Atmospheric Science 2017 - Present
University of California, Davis, Davis, CA
Anticipated Graduation: Fall 2022

Bachelor of Science, Atmospheric Sciences 2012 - 2017
University of North Dakota, Grand Forks, ND
Minor: Mathematics

Bachelor of Science, Aeronautics 2012 - 2017
University of North Dakota, Grand Forks, ND

TECHNICAL

Languages & Software: Python, Julia, Fortran

Operating Systems: Unix/Linux, MacOS, Windows

Software Packages:

- [PyRAMS](#) (maintainer) - Package for working with RAMS model data
- [Kerchunk](#) (contributor) - Cloud performant access to NetCDF4 data

PUBLICATIONS

Do Arctic mixed-phase clouds sometimes dissipate due to insufficient aerosol? Evidence from comparisons between observations and idealized simulations 2022
Sterzinger, L. J., Sedlar, J., Guy, H., Neely III, R., & Igel, A. L.
Atmospheric Chemistry and Physics
<https://doi.org/10.5194/acp-22-8973-2022>

The Effects of Ice Habit on Simulated Orographic Snowfall 2021
Sterzinger, L. J., & Igel, A. L. - *Journal of Hydrometeorology*
<https://doi.org/10.1175/JHM-D-20-0253.1>

Models in the Cloud: A Cost Exploration of Cloud Computing for the Atmospheric Sciences 2017
News@Unidata Blog
<https://www.unidata.ucar.edu/blogs/news/entry/models-in-the-cloud-a>

WORK EXPERIENCE

Graduate Student Researcher

2017 - Present

Atmospheric Science Graduate Group, UC Davis
Dr. Adele Igel, Faculty Advisor

- Works on various research related to cloud and precipitation physics. Projects include:
 - Effect of ice crystal habit (shape) on orographic snowfall in the Sierra Nevada Mountains. (Funding: Internal)
 - Examining the relationship between mixed-phase Arctic cloud dissipation and aerosol properties. (Funding: DOE ASR; A. Igel, PI)
 - Assessing relative impacts on aerosol contained within the boundary layer and free troposphere on the microphysics and other properties of Arctic mixed-phase clouds. (Funding: DOE ASR; A. Igel, PI)

Intern

Summer 2021

Summer Internship in Parallel Computational Science (SIParCS)
National Center for Atmospheric Research (NCAR), Boulder, CO

- Worked with Chelle Gentemann (Farallon Inst./NASA TOPS), Kevin Paul (NCAR), Julia Kent (NCAR), Rich Signell (USGS) and Martin Durant (Anaconda Inc.) on the development of the Kerchunk software library and its applicability and performance accessing cloud-hosted NOAA/NASA satellite data.
- Wrote documentation, blog posts, and example code on how to get started using Kerchunk - published open-source on GitHub.

Undergraduate Research Assistant

2016 - 2017

Dept. of Atmospheric Sciences, University of N. Dakota
Dr. Gretchen Mullendore, Faculty Advisor

- Worked on the “Big Weather Web” project examining potential uses for cloud computing infrastructure for numerical weather prediction.

Undergraduate Teaching Assistant

2015 - 2017

Dept. of Atmospheric Sciences, University of N. Dakota

- Independently taught Introduction to Meteorology lab, complete with weekly lectures and laboratory experiments.

Technical Support Specialist

2012 - 2017

Univ. of N. Dakota School of Medicine and Health Sciences

- Responsible for direct technology support to faculty, staff, and students. Also worked on managing video conference systems, networks, and servers.

SERVICE

UC Davis Graduate Student Association

- General Assembly Representative 2019-2022
- Elections Committee 2019-2020

UC Davis Academic Senate
Committee on Information Technology
Graduate Student Representative

2020-2021

SELECTED CONFERENCE PRESENTATIONS

Open Science Success Stories

Dec. 2022

Session Co-Convener
American Geophysics Union Fall Meeting 2022 - Chicago, IL

***Arctic Mixed-Phase Clouds Sometimes Dissipate Due to
Insufficient Aerosol - Evidence from Idealized Large Eddy Simulations***

May 2022

Oral Presentation
European Geosciences Union General Assembly 2022 - Vienna, Austria

***Arctic Mixed-Phase Clouds Sometimes Dissipate due to
Insufficient Aerosol: Evidence from Idealized Large Eddy Simulations***

Apr. 2022

Oral Presentation
2nd QuIESCENT Workshop - Tromsø, Norway

***Fake it until you make it — Reading GOES NetCDF4
data on AWS S3 as Zarr for rapid data access***

Jan. 2022

Oral Presentation and Interactive Workshop
2022 ESIP January Meeting

***Cloud-performant reading of NetCDF4/HDF5/Grib2
using the Zarr library***

Dec. 2021

Oral Presentation
American Geophysics Union Fall Meeting 2021

***Effects of Aerosol Concentration on the Dissipation
of Arctic Mixed-Phase Clouds***

Dec. 2020

eLightning
American Geophysics Union Fall Meeting 2020

MEMBERSHIPS

American Meteorological Society
American Geophysics Union
European Geosciences Union

LANGUAGES

English
French (Bilingual Fluency)