
Jan Kazil, PhD

**Applied Scientist
Weather · Climate ·
Atmosphere**

Atmospheric scientist with 15+ years of experience in data analysis, atmospheric modeling, software development, and operational work.

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Portfolio

<https://github.com/jankazil> | <https://jankazil.com>

Skills

ML/AI Development (PyTorch), Python (NumPy, Pandas/GeoPandas, Xarray), Jupyter, IDL, Fortran, MPI, OpenMP, Git, netCDF, Bash, Csh, Linux High-Performance Computing, Parallelization, Large Dataset Analysis, Atmospheric Model Development and Operation

Projects and Experience

ML/AI Development

Designed and implemented torch-tk, an open-source PyTorch toolkit to streamline training, checkpoint management, and diagnostics of PyTorch models.

Trained and applied a deep learning model for instance segmentation in satellite imagery.

Created a neural network emulator for an atmospheric radiative transfer model to improve host model efficiency.

Automated Data Extraction & Analysis with Python

Built and deployed a Python-based system to extract, process, and analyze satellite and NWP data from Amazon Web Services (AWS) in near-real time. This delivered critical data for forecasting and decision-making, supporting the success of the NOAA/NASA 2023 AEROMMA Marine field campaign.

Dataset Analysis and Software

Designed and deployed Python applications to automate the analysis and visualization of atmospheric model output and observations.

Atmospheric/Climate Model Development

Developed and deployed numerical process representations for high-resolution models, numerical weather prediction models, and climate models.

Developed a high-resolution downscaling approach for climate simulations.

Atmospheric/Climate Simulations

Operated simulations with high-resolution models, numerical weather prediction models, and climate models.

High-Performance Computing

Built and deployed MPI- and OpenMP-parallelized software to process and analyze large datasets from atmospheric, weather prediction, and climate simulations on Linux high-performance computing systems.

Meteorological Forecast Team Lead

Led the 24-hour weather forecast effort for the 2023 AEROMMA Marine aircraft campaign, supporting flight operations and coordinating target sampling strategy.

Mission Guidance and Coordination

Served as Flight Scientist on NOAA's P-3 aircraft during the 2020 ATOMIC campaign, guiding aircraft operations based on real-time meteorological assessment and scientific goals.

Grants

Secured \$1.3M in research funding as lead investigator.

Professional History

University of Colorado, Cooperative Institute for Research in Environmental Sciences (CIRES), Boulder, CO, USA

05/2024 – 03/2025 Senior Research Scientist

Served as University of Colorado/CIRES project lead for "Clouds, Aerosol, and Climate" and as an international research project lead.

05/2015 – 04/2024 Research Scientist III

12/2008 – 04/2015 Research Scientist II

Max Planck Institute for Meteorology, Hamburg, Germany

08/2007 – 11/2008 Research Scientist

University of Colorado (CIRES), Boulder, CO, USA

03/2007 – 07/2007 Research Scientist I

Education

PhD, Atmospheric Science

University of Bern, Physics Institute, Bern, Switzerland

MSc, Theoretical Physics

University of Bern, Institute of Theoretical Physics, Bern, Switzerland

Honors and Awards

Elected member of the American Meteorological Society's Committee on Cloud Physics (2019–2025).

University of Colorado/CIRES Bronze Medal for "Scientific achievement in the design and implementation of the ATOMIC field campaign" (2023).