

Jan (Yan) Kazil, PhD

Research Scientist – Atmosphere, Weather, and Climate

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Summary

Atmospheric scientist with over 15 years of experience in numerical modeling and observational analysis of weather and climate. Proven expertise in atmospheric model development and operation (large-eddy simulations, air quality, weather, and climate models), high-performance computing, machine learning, analysis of in situ and remote sensing data, and operational forecasting. Led international research projects and interdisciplinary teams supporting field campaigns (NOAA, NASA). Passionate about cutting-edge science, actionable understanding, and operational deployment.

Key Competencies

- **Model Development, Simulation & Analysis:** LES, WRF, WRF/Chem, HRRR, ECHAM-HAM, CMIP, ERA5, HYSPLIT
 - **Machine Learning:** TensorFlow, Keras, Mask R-CNN
 - **Programming:** Python, Fortran, MPI, OpenMP, bash, IDL
 - **Data & Tools:** Ship/surface/satellite/aircraft data, netCDF, CDO, AWS, git, Linux
 - **Operations:** Aircraft mission planning, flight guidance, meteorological forecasting
 - **Grants:** Securing funding, leading research projects, communicating with program management
 - **Leadership, Supervision, Mentoring:** Led international projects and interdisciplinary teams, supervised scientists, mentored undergraduate students, graduate students, and postdocs
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Selected Research and Operational Roles

- **Lead Investigator** – Designed and led research projects on cloud organization, cloud response to climate change, and cold pool modeling. Secured \$1.3M in funding.
 - **International Coordination** – Founded and led the Cold Pool Model Intercomparison Project (CP-MIP), involving partners from 12 institutions.
 - **Forecast Team Lead** – NOAA/NASA AEROMMA (2023): Led 24-hour forecasting for marine aircraft research flights. Developed methodology and tools, coordinated team efforts.
 - **Flight Scientist** – NOAA ATOMIC (2020): Developed flight strategies aligned with scientific goals. Guided aircraft based on real-time meteorological analysis.
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Professional Experience

Senior Research Scientist

University of Colorado (CIRES) & NOAA, Boulder, CO, USA
May 2024 – Mar 2025

Research Scientist III

University of Colorado (CIRES) & NOAA, Boulder, CO, USA
May 2015 – Apr 2024

Research Scientist II

University of Colorado (CIRES) & NOAA, Boulder, CO, USA
Dec 2008 – Apr 2015

Research Scientist

Max Planck Institute for Meteorology, Hamburg, Germany
Aug 2007 – Nov 2008

Research Scientist I

University of Colorado (CIRES) & NOAA, Boulder, CO, USA
Mar 2007 – Jul 2007

Education

PhD Atmospheric Science

University of Bern, Switzerland

MSc Theoretical Physics, Mathematics, and Astronomy

University of Bern, Switzerland

Grants (Lead Investigator)

- 2019 – 2024: Shallow cumulus convection and climate variability (NOAA) – \$498,479
 - 2016 – 2017: Cloud radiative effect emulator (NOAA) – \$103,259
 - 2012 – 2015: Aerosol-cloud-precipitation interactions in the SE Pacific (DOE) – \$344,000
 - 2009 – 2011: Gas phase emissions and cloud properties (NOAA/NSF) – \$345,000
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Honors and Awards

- CIRES Bronze Medal for scientific achievement – ATOMIC campaign (2023)
 - American Meteorological Society (AMS) Committee on Cloud Physics (elected member, 2019-2025)
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Scientific Reviews and Panels

- U.S. Department of Energy (DOE)
 - U.S. National Science Foundation (NSF)
 - U.S. National Oceanic and Atmospheric Administration (NOAA)
 - Swiss National Science Foundation (SNSF)
 - Israel Science Foundation (ISF)
 - European Co-operation in Science and Technology (COST)
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Publications

Publication list: <https://orcid.org/0000-0003-3271-2451> | 42 peer-reviewed papers | > 1600 citations | h-index: 23

Selected papers

1. Kazil et al., 2024, *On Climate Change and Trade Cumulus Organization*, JAMES, [doi:10.1029/2023MS004057](https://doi.org/10.1029/2023MS004057)
 2. Narenpitak, Kazil, et al., 2021, *From sugar to flowers: a transition of shallow cumulus organization during ATOMIC*, JAMES, [doi:10.1029/2021MS002619](https://doi.org/10.1029/2021MS002619)
 3. Kazil et al., 2021, *Realism of Lagrangian large eddy simulations driven by reanalysis meteorology: tracking a pocket of open cells under a biomass burning aerosol layer*, JAMES, [doi:10.1029/2021MS002664](https://doi.org/10.1029/2021MS002664)
 4. Goren, Kazil, et al., 2019, *Anthropogenic air pollution delays marine stratocumulus breakup to open cells*, GRL, [doi:10.1029/2019GL085412](https://doi.org/10.1029/2019GL085412)
 5. Kazil et al., 2010, *Aerosol nucleation and its role for clouds and Earth's radiative forcing in the aerosol-climate model ECHAM5-HAM*, ACP, [doi:10.5194/acp-10-10733-2010](https://doi.org/10.5194/acp-10-10733-2010)
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Languages

- English (professional proficiency, ILR 4/4+)
 - German (native proficiency, ILR 5)
 - Czech (native proficiency, ILR 5)
 - French (elementary proficiency, ILR 1)
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