

## James V. Rudolph

Dept. of Atmospheric and Oceanic Sciences  
University of Colorado Boulder  
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### EDUCATION

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- 2012 **Ph.D.** Atmospheric and Oceanic Sciences, Graduate Certificate in Hydrologic Sciences, University of Colorado – Boulder  
Thesis title: *An operational radar-based precipitation climatology for the Swiss Alps*  
Research Advisor: Dr. Katja Friedrich
- 1992 **B.S.** Chemical Engineering, University of Illinois – Urbana-Champaign

### RESEARCH INTERESTS

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- Climate analysis and forecasting via coupling of model output with observations
- Hydrologic impacts of climate change
- Precipitation climatology in complex terrain
- Orographic precipitation mechanisms and distribution
- Instrument-based precipitation observations: radar, gauge, disdrometer

### SKILLS

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- Observational data analysis
- Model output analysis: global climate models, reanalysis
- Large dataset handling and processing
- Written and oral communications: university instructor, peer-reviewed scientific journal articles, multiple oral presentations in corporate and scientific conferences
- Project management: experience in scope definition, resource planning, adherence to schedule and budget for complex, multimillion-dollar projects

### EMPLOYMENT HISTORY

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#### University of Colorado – Boulder, Department of Atmospheric and Oceanic Sciences

- 2020-current **Instructor and Learning Assistant Departmental Coordinator;** Instructed course *Mountain Meteorology*. Responsible for securing approvals for, hiring, and organizing 12 undergraduate Learning Assistants.
- 2015 **Instructor;** Instructed undergraduate course *Weather and the Atmosphere*.
- 2009 – 2013 **Research Associate;** Developed novel approaches for utilizing radar-based precipitation estimates to assess past and future climate.
- 2008 **Teaching Assistant;** Instructed undergraduate course *Weather and the Atmosphere Lab*.

#### AveXis, Inc.

- 2019-2020 **Validation Consultant;** Longmont, CO: Coordinated issue resolution and team alignment for commissioning and qualification of new manufacturing facilities, equipment and instrumentation.

**KBI Biopharma**

2016-2017 **Sr. Project Manager – Engineering**; Boulder, CO: Managed conceptual through detailed design of \$10 million biotech manufacturing capacity expansion and lab upgrade projects.

**Zentralanstalt für Meteorologie und Geodynamik (ZAMG)**

2014 – 2015 **Project Scientist**; Innsbruck, Austria: Utilized data from Austrian and Italian operational radars to develop convective climatology for Tirol region as part of 3pclim project (3pclim.eu). Results published in book *Das Klima von Tirol, Sudtirol, Belluno*, Chapter 4: Konvektion [Convection], ZAMG, 2015.

**Eli Lilly and Company**

2005 – 2008 **Engineering Manager**; Indianapolis, IN: Provided technical and administrative leadership to 20 process and project engineers.

2002 – 2005 **Project Manager**; Carolina, Puerto Rico: Led technical design and managed interdisciplinary multinational project team to completion of \$200 million pharmaceutical manufacturing facility.

1999 – 2002 **Project Engineer**; Indianapolis, IN: Defined project scope, led detailed design, and supported start up for manufacturing capacity expansion.

1992 – 1997 **Process Engineer**; Indianapolis, IN: Designed and implemented improvement projects in pharmaceutical manufacturing.

**Alkermes, Incorporated**

1997 – 1999 **Manufacturing Team Leader and Process Engineer**; Cambridge, MA: Supervised operators and contributed to design of new facility.

**REVIEWED PUBLICATIONS**


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Rudolph, J.V. and K. Friedrich, 2014: Dynamic and thermodynamic predictors of vertical structure in radar-observed regional precipitation. *J. Climate*, 27, 2143-2158.

Rudolph, J.V. and K. Friedrich, 2013: Seasonality of vertical structure in radar-observed precipitation over southern Switzerland. *J. Hydrometeorol.*, 14, 318-330.

Rudolph, J.V., K. Friedrich, and U. Germann, 2012: Model-based estimation of dynamic effect on 21st century precipitation for Swiss river basins. *J. Climate*, 25, 2897-2913.

Rudolph, J.V., K. Friedrich, and U. Germann, 2011: Relationship between radar-estimated precipitation and synoptic weather patterns in the European Alps. *J. Appl. Meteor. Climatol.*, 50, 944–957.

**CONFERENCE PRESENTATIONS**


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Rudolph, J.V. and K. Friedrich, 2012: Seasonality of vertical structure in radar-observed precipitation over southern Switzerland. NCAR Research Applications Laboratory Orographic Precipitation and Climate Change Workshop and American Meteorological Society 15th Conference on Mountain Meteorology.

Rudolph, J.V., K. Friedrich, and U. Germann, 2011: 21st century precipitation trend for Swiss river basins. University of Colorado Hydrologic Sciences Student Research Symposium.

Rudolph, J.V., K. Friedrich, and U. Germann, 2010: Relationship between radar-estimated precipitation and synoptic weather patterns in the European Alps. American Meteorological Society 14th Conference on Mountain Meteorology.

Rudolph, J.V., K. Friedrich, and U. Germann, 2009: A radar-based climatology of high precipitation events in the European Alps: 2000-2007. American Meteorological Society 13<sup>th</sup> Conference on Mesoscale Processes. (2<sup>nd</sup> place best student presentation).