



Postdoctoral Research Associate – Phased Array Weather Radar Algorithm Development

Position Description

The Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO) is seeking a Postdoctoral Research Associate to work in the Precipitation and Advanced Radar Studies (PARS) team at the NOAA National Severe Storms Laboratory (NSSL) in Norman, Oklahoma (<https://www.ou.edu/nwc>). This role provides an exciting opportunity to lead and participate in cutting-edge research designed to investigate potential operational benefits provided by phased array weather radars. The primary duties of the position will be to lead research efforts to investigate how rapidly- and adaptively-scanned phased array radar data might be used to develop and/or improve severe weather detection and warning algorithms.

Overview

In collaboration with NSSL research scientists and engineers, CIWRO scientists have been working to collect and analyze data from the Advanced Technology Demonstrator (ATD), a S-band, dual-polarization phased array weather radar that was designed to evaluate the operational potential of both rapid- and adaptive-scanning capabilities. Over the past 3 years, nearly 500 hours of meteorological data have been collected by the ATD, primarily using scanning strategies that emphasized collecting data with both a higher temporal resolution and more dense vertical coverage than are currently possible WSR-88D radars, as well as unique datasets that leverage the flexible transmission modes and inertia-free beam steering afforded by phased array weather radars. These data are therefore ideally suited for investigating how dual-polarization phased array radar data might be used to not only improve existing severe weather detection and warning algorithms, but to also develop new algorithms that demonstrate operational potential.

Key Responsibilities

- Lead efforts to analyze dual-polarization data from the ATD with the goal of investigating how radar data collected with a higher temporal resolution might be used to improve existing severe weather algorithms.
- Lead and provide regular summaries of work accomplished through peer-reviewed publications and contributions to reports, as needed.
- Lead efforts to analyze dual-polarization data from the ATD with the goal of investigating how radar data collected with more dense vertical coverage might be used to improve existing severe weather algorithms
- Collaborate with other PARS scientists on the design of scanning strategies and collection of ATD data.
- Lead efforts to analyze data collected from the ATD utilizing non-conventional scanning strategies with the goal of investigating how radar data collected in ways not possible with the WSR-88D radars might be used to improve existing severe weather algorithms.

- Attend meetings and professional conferences to present research results and interact with collaborators.

Qualifications

- Ph.D. in Meteorology, Atmospheric Science, or related area.
- Demonstrates expertise in weather radar systems, conventional and polarimetric radar products, and severe local storm research.
- Experience with scientific programming in UNIX/Linux systems using high-level programming languages such as Python, Matlab, C++, etc.
- Experience working with large datasets.
- Working knowledge of radar-based severe weather algorithms.
- Excellent oral and written communication skills.
- Ability to work independently and collaboratively and communicate effectively in a team environment.

Benefits and Work–Life Balance

Joining our team comes with numerous benefits, including:

- Competitive salary based on experience and comprehensive university benefits (<http://hr.ou.edu/>).
- Generous paid leave, encompassing 14 paid holidays and 22 hours of accrued paid time off per month.
- Reduced membership at the University of Oklahoma’s state-of-the-art fitness and aquatic center (<https://www.ou.edu/far>).

More details about working at the University of Oklahoma, benefits packages, as well as living in Norman, Oklahoma are provided on our website: <https://jobs.ou.edu/Discover-OU>.

We are dedicated to promoting a healthy work–life balance by championing a flexible work culture, offering adaptable work hours and a hybrid work arrangement. This framework enables team members to navigate personal commitments while effectively contributing to their professional responsibilities.

How to Apply

Applications should be emailed to ciwro-careers@ou.edu, Attn: PARS, and include:

- A cover letter highlighting your interest in the position and describing how you meet the position qualifications,
- The names and contact information for three references
- Your résumé/CV

Applications will be accepted until the position is filled. The starting date is negotiable. *The University of Oklahoma is an Equal Opportunity/Affirmative Action employer.*