AMS Open Radar Short Course

Date: Sunday August 27, 2023
Venue: Hyatt Regency
Course Title: Open Radar Short Course
Learning Objectives:

1. Present an overview of the latest available open-source software packages for radar data processing.
2. Learn to use some of these tools with guided exercises in a hands-on approach.
3. Explore some analysis ready workflows that can be adapted for your science.

Prerequisites*:

- Basics of Python
- Basics of Linux Command Line

*provided to attendees before the meeting, if they are not already familiar

Course Description:
The course will discuss the principles of open science and provide an overview of the most mature and exciting open-source software packages available for radar data processing. It will have a hands-on approach and the students will be able to use the software packages themselves.

The first part of the day will focus on getting an overview of the ecosystem, followed by package-specific tutorials. The second half of the day will focus on common tools for more-specific data analysis, such as deriving three-dimensional wind fields or tracking features, all using open source packages. Anyone with interest in using or developing open source software tools is welcome.

Teachers:

- Maxwell Grover, Argonne National Laboratory
- Joseph O'Brien, Argonne National Laboratory
- Robert Jackson, Argonne National Laboratory
- Daniel Wolfensberger, Meteoswiss
- Daniel Michelson, Environment and Climate Change Canada
- Ryan May, Unidata Program Office
- Drew Camron, Unidata Program Office
- Kai Mühlbauer, University of Bonn
- Jennifer DeHart, Colorado State University
- Ting Yu Cha, Colorado State University
- Sean Freeman, University of Alabama Huntsville
- Kelcy Brunner, Texas Tech University

Program:

Time	Content	Speaker/Chair	Duration
08:00 AM - 08:30 AM	Overview of the Open Radar Community + Tools	Max Grover	30 minutes
8:30 - 8:45 AM	Intro to xradar	Max Grover	15 minutes
08:45 AM - 09:30 AM	Hands on with Py-ART	Joe O'Brien	45 minutes
09:30 AM - 10:00 AM	Hands on with Pyrad	Jordi Figueras i Ventura and Daniel Wolfensberger	30 minutes
10:00 AM - 10:30 AM	Coffee Break		30 minutes
10:30 AM - 11:15 AM	Hands on with wradlib	Julian Giles	45 minutes
11:15 AM - 12:00 PM	Hands on with LROSE wind tools	Jen DeHart + Ting-Yu Cha	45 minutes
12:00 PM - 01:00 PM	LUNCH		1 hour 15 minutes
01:00 PM - 01:45 PM	Multi-Doppler Analysis with PyDDA	Bobby Jackson	45 minutes
01:45 PM - 02:15 PM	Tracking Cells with TOBAC	Sean Freeman + Kelcy Brunner	30 minutes
02:15 PM - 03:00 PM	Visualizing other Observations and Models with Radar using MetPy	Ryan May	45 minutes
03:00 PM - 03:30 PM	Hands on with BALTRAD	Daniel Michelson	30 minutes
03:30 PM - 03:45 PM	Closing	Max Grover	15 minutes