METPY FOR QUANTITATIVE ANALYSIS OF METEOROLOGICAL DATA

SHORT COURSE ORGANIZER
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SUN 23 JAN

8:30 A.M. **SETUP USER SYSTEMS (optional)** Ryan May
- Installation instructions will be sent out ahead of time
- This is an optional time to help troubleshoot anyone having problems

9:00 A.M. **ARRIVAL AND INTRODUCTIONS** Ryan May
- Introduce speakers, their backgrounds. Have participants quickly state their names and what they hope to gain from the course.

9:15 A.M. **SIPHON FOR REMOTE DATA ACCESS** Drew Camron
- Demonstrate the use of Siphon to access remote datasets through a variety of services that permit downloading all or portions of datasets
- Learn how to access realtime and archive sets of gridded fields, like model output and reanalysis

10:00 A.M. **COFFEE BREAK**

10:30 A.M. **METPY INTRODUCTION** Ryan May
- Learn the basics of using MetPy
- Learn how MetPy uses the Pint library to track physical unit information
- Use MetPy to make some basic calculations

11:15 A.M. **INTERMEDIATE METPY CALCULATIONS** Drew Camron
- Introduce the broad categories of MetPy calculations (e.g. kinematic, thermodynamics)
- Apply basic calculations to downloaded sets of gridded data
- Use various functions (e.g. advection, frontogenesis) to analyze synoptic-scale features
- Make basic plots

12:00 P.M. **LUNCH (on your own)**

1:15 P.M. **ADVANCED METPY: QUASI-GEOSTROPHIC ANALYSIS** Kevin Goebbert
- Examine case study of synoptic event
- Combine MetPy calculation functions to calculate forcing terms in quasi-geostrophic omega equation
- Calculate thermodynamic quantities to identify regions of latent heat release

2:30 P.M. **COFFEE BREAK**

2:45 P.M. **ADVANCED METPY: ISENTROPIC ASCENT**
- Build on the case study from the quasi-geostrophic analysis unit
- Use MetPy to interpolate variables to isentropic levels
- Visually identify areas of isentropic lift and calculate vertical motion

3:35 P.M. **WRAP UP**
- Gather feedback from participants on how the course will be of use to their work and general course feedback.

3:45 P.M. **ADJOURN**

4:00 P.M. **AMS ANNUAL MEETING PRESIDENTIAL FORUM**