LEAP 2024 winter Momentum Boot Camp Day-1 Processing and Visualization of Climate Data

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Learning Goals:
1. Learn to process, analyze and visualize climate data with scientific Python using the LEAP-Pangeo Jupyter Hub;
2. Gain a understanding of fundamental climate concepts, alongside common diagnostic statistics and techniques.

Schedule

The workplan for Day-1 is on the following page. We mainly follow the workshop 2023 Train-the-Trainer Bootcamp Day 1: Climate and Geospatial Data Analysis by Prof. Ryan Abernathey. The day is divided into lecture sessions and interactive studios, offering participants the chance to solidify their learning through hands-on practice. Students are asked to mirror the instructor's each step during lecture sessions using LEAP-Pangeo Hub and are encouraged to work in groups.

Materials:
- An Introduction to Earth and Environmental Data Science
- Xarray User Guide
- Xarray Tutorial
- Introduction to Climate Modelling
- What Is Remote Sensing?

Time	Topic
8:30 – 9:15	Check in / Breakfast
9:15 – 9:20	Greeting from Prof. Pierre Gentine, LEAP center director
9:20 – 9:30	LEAP-Pangeo Login and Pre-lecture Preparation
9:30 – 9:40	Introduction of Climate Data & LEAP-Pangeo
9:40 – 11:10	Session 1: Basic Xarray ([Argo](#))
11:10 – 12:00	Studio 1: Analyzing Atmospheric Radiation ([CERES](#))
12:00 – 13:00	Lunch + Break
13:00 – 14:30	Session 2: Advanced Xarray
14:30 – 15:20	Studio 2: Analyzing [El Niño](#) Variability ([ERSST](#))
15:20 – 15:30	Break
15:30 – 16:20	Session 3: Climate Simulations in the Cloud ([CMIP6](#))
16:20 – 17:00	Studio 3: Multi-Model Analysis and Comparison