

Climate Modelling in-class worksheet 2 (week 3)

Group members:

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This worksheet is based on Lab 4: Introducing the Community Earth System and the introduction to xarray discussed in class. Work through this lab, completing the exercises within the lab, and adding some additional cells/calculations will help you answer the following questions (don't forget to make a copy of the lab before you open/change anything!).

- 1) Fetch and reset the course notebooks following the week2 instructions:
https://phaustin.org/climate_2022/week2_topics.html#syncing-your-notebooks-to-the-current-github-commit
- 2) Activate the climphys environment and add the datasets using pip:
`pip install -r requirements.txt`
where requirements.txt is:
https://github.com/phaustin/climate_students_eoas/blob/student_branch/requirements.txt
- 3) Work through the first xarray notebook:
https://github.com/phaustin/climate_students_eoas/blob/student_branch/content/courseware/xarray/01-xarray-intro.md

For today, do the first question at the bottom of the lab:

- 1) plot the time mean of the solar insolation (2d contour plot)

Followed by:

- 2) plot the annual cycle of solar insolation in the northern hemisphere average over lats and lons (line plot of insolation for each month.) To see how slicing on specific lat/lons works, take a look at the ENSO notebook:
https://github.com/phaustin/climate_students_eoas/blob/student_branch/content/courseware/xarray/03-enso-xarray.md