

## MET 3601 Syntax Problem #9

Please do your work in the syntax-problems folder on the JupyterHub and **DON'T** forget to also **upload both the figure and the .ipynb file to Canvas!**

<https://fit24f-1.ees220002.projects.jetstream-cloud.org/>

### Objectives

1. Practice writing and running Python code
2. Use File I/O for input into program

*Due by 11:00 am on 10/9/2024*

### Problem

1. Write a Python program that reads in NCEP-NCAR Reanalysis 1991-2020 long-term mean (LTM) of the Visible Beam Downward Solar Flux (variable name **vbdsf**) from a remote server using xarray. Plot the the LTM flux for the month of March (time index 2) with contours every 20 W/m<sup>2</sup>. DO NOT download the data! Use the xarray open\_dataset function to access the URL directly.

[http://psl.noaa.gov/thredds/dodsC/Datasets/ncp.reanalysis/Monthlies/surface\\_gauss/vbdsf.sfc.mon.ltm.1991-2020.nc](http://psl.noaa.gov/thredds/dodsC/Datasets/ncp.reanalysis/Monthlies/surface_gauss/vbdsf.sfc.mon.ltm.1991-2020.nc)

*Notes:*

### Call the image sunshine.png

- Make sure documentation (e.g., comment block and comments throughout code) is present in your source code.
- Make the output informative so that anyone running your program understand what is being produced without seeing the assignment.
- Rename the program (notebook)

syntax9\_lastname.ipynb

where 'lastname' is your lastname 😊