Mapping Sea Surface Temperature (SST) Differences

1. Access monthly SST data from here:
https://iridl.ldeo.columbia.edu/SOURCES/.NOAA/.NCEP/.EMC/.CMB/.GLOBAL/.Reyn_SmithOIv2/.monthly/.sst/

2. From the Data Selection tab restrict the latitude and longitude coordinates to an area of interest. You choose!
3. For the time, pick a specific month between 1982 - 2022.
4. Select RESTRICT RANGES. Then select STOP SELECTING.
5. Select the EXPERT MODE tab. Then, copy the text then paste just below it.
6. Change the year of the pasted section to a different year, but keep the same month.
7. Type the following just below the final line: sub
8. Push enter.
9. Select OK.
You have now subtracted two dates and will see a DIFFERENCE MAP.
10. Go to views, then select COLORS WITH LAND.
The result is NOT sea surface temperature! It is the sea surface temperature difference (in degrees C). Note the data range.
11. Select EDIT PLOT near the bottom right of the map. Select a new color scale on the Plot pull-down menu. Select temp_anomaly_colors from the list.
12. Notice just below the color scale that the new color scale has been input. Copy that entire line that starts with temp_anomaly and ends with :fig.
13. Hit the back button TWICE.
14. Select EXPERT MODE
15. Paste the line copied from step 12 above at the bottom of the lines (just below the word "sub"). Then push enter.
16. Select OK.
17. Select the OPTIONS tab.
18. Select VIEWER.
19. Change the data range to be between -1 and +1. This can be found on the cells at the bottom left and bottom right of the color scale.
20. Select the counter-clockwise circle icon on the left.
21. Voila! Now you have a SST difference map from an area and time that you selected.

Assignment:

1. Submit a map with color scale and temperature range between -1 and 1 (5pts).

2. State which year was selected first in the data selection and what year was selected second. The, describe where on the map was warmer / cooler for a particular year (3pts).

3. What would a SST difference map look like if you subtracted August 2020 from January 2020? What would the values be? (2pts)

Submit assignment to tallen@cimh.edu.bb as an attached document by Monday Feb. 19, 2023.