

Mapping Seasonal Composites

Objective: To demonstrate how to calculate and map seasonal composites using ENSO as an example.

BUILD SST Anomaly Composite Maps

1. Go here:
https://www.esrl.noaa.gov/psd/cgi-bin/gcos_wgsp/printpage.pl
2. Select HadSST dataset in the data options pull down menu.
3. Enter the season for December to February. You will need to manually enter the first and last month of the season.
4. Enter the years of the top El Nino events. These years can be found here:
<https://ggweather.com/enso/oni.htm>
BE SURE to enter the last year of the season in “years for composites” section. For example Dec, Jan, Feb for the 1982-1983 El Nino, you would enter 1983.
5. BE SURE to select ANOMALY for the plot type.
6. Select CREATE PLOT at the bottom. Save your map.
7. Repeat the above for the strongest La Nina years.

BUILD Rainfall Anomaly Composite Maps:

1. Go here:
<https://www.esrl.noaa.gov/psd/cgi-bin/data/composites/printpage.pl>
2. Select GPCP Precipitation dataset in the variable options pull down menu.
3. Enter the season for December to February. You will need to manually enter the first and last month of the season.
4. Enter the years of the top El Nino events. These years can be found here:
<https://ggweather.com/enso/oni.htm>
BE SURE to enter the last year of the season in “years for composites” section. For example Dec, Jan, Feb for the 1982-1983 El Nino, you would enter 1983.
5. BE SURE to select ANOMALY for the plot type.
6. Select CREATE PLOT at the bottom. Save your map.
7. Repeat the above for the strongest La Nina years.

You will now have 4 maps:

- 1) SSTA composites for very strong El Nino events (1pt)
- 2) SSTA composites for strong La Nina events (1pt)
- 3) Rainfall anomaly composite for very strong El Nino events (1pt)
- 4) Rainfall anomaly composite for strong La Nina events (1pt)

5. Compare, contrast, describe, and interpret the following:

- a) The relationship between SSTA in the eastern Pacific and very strong El Nino events (1pt)
- b) The relationship between SSTA in the eastern Pacific and strong La Nina events (1pt)
- c) How does SST compare between a very strong El Nino and a strong La Nina event? (1pt)
- d) The relationship between very strong El Nino events and rainfall in the Caribbean (1pt)
- e) The relationship between strong La Nina events and rainfall in the Caribbean (1pt)

6. How are composite anomaly maps generated? What types of information do you need to produce a composite anomaly map? (1pt)

Email maps and write up to:

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DUE BEFORE NOV 14, 2023. **NO LATE WORK ACCEPTED**