

# The Impact of ENSO on Precipitation in the Philippines

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Iguanacolossus\_Bogle\_Agitato



**Climatematch**  
Academy —

Climate in the Philippines is highly influenced by ENSO.

**La Niña**



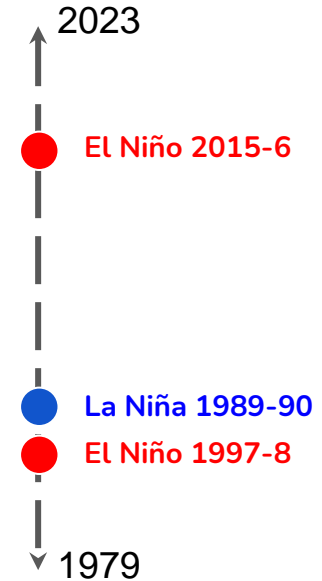
**El Niño**



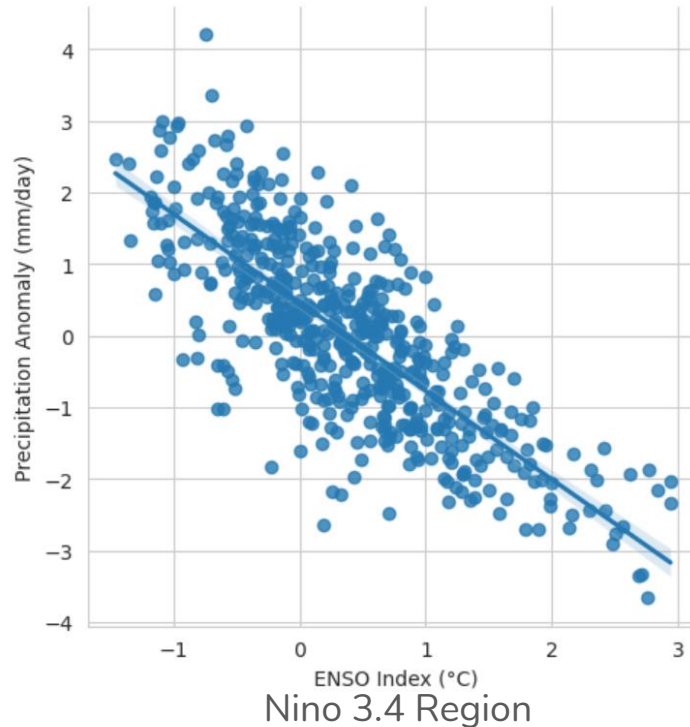
# Dataset

## Observation Data:

- Extended Reconstructed Sea Surface Temperature (ERSST) v5 by NOAA
- CMAP Precipitation Data by NOAA



# Correlation between the ENSO Index and Precipitation



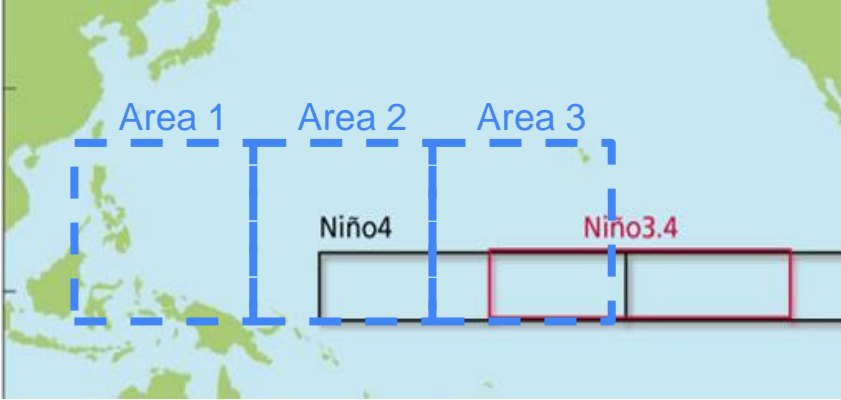
$$R^2 = 0.58$$

$$R\text{-value} = -0.76$$

$$y = -1.14x + 0.462$$

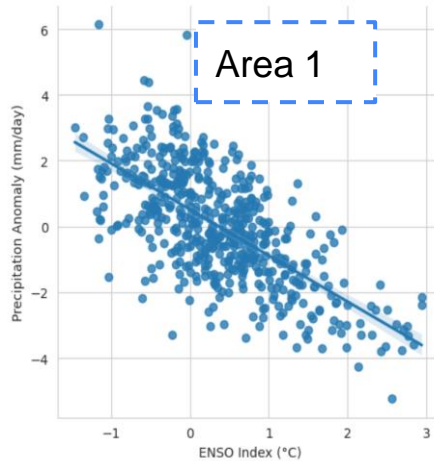
$$p\text{-value} = 1.08e-102$$



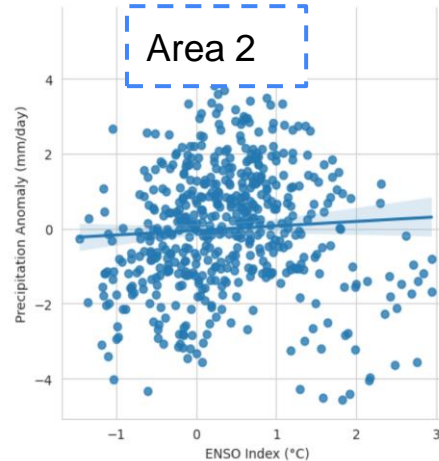


# Region-wise precipitation correlation with ENSO

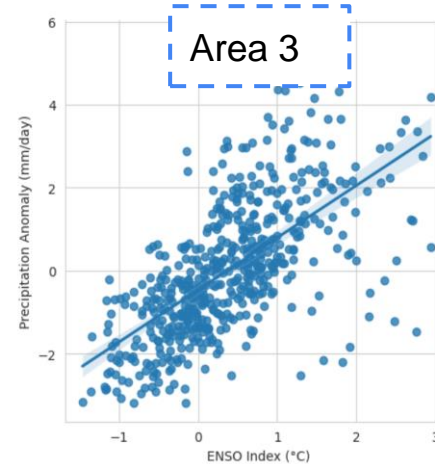
$r = -0.67$   
 $p\text{-value} = 2.46e-71$



$r = 0.05$   
 $p\text{-value} = 0.17$



$r = 0.64$   
 $p\text{-value} = 1.7e-64$



# CONCLUSION



- Area-wise trends show trends of precipitation across the pacific ocean upto the Philippines
- The precipitation estimates will help in better agriculture management, disaster preparedness and will be useful for policy makers.
- Future study will expand the effect of ENSO in the neighbouring regions of Philippines.



# Thank you!

**Iguanacolossus\_Bogle\_Agitato**

Neil Marc Sordilla

Kirtana Phatnani

Kimia Marvi

Anjana Shree







# Results

1. Correlation between ENSO and precipitation (Phil)
2. Correlation between ENSO and SST (Phil)
3. Area-wise difference in SST and precipitation
4. Area-wise precipitation pattern inflection point
5. (to do) linear regression between enso and precipitation



AutoSave On Presentation1 - PowerPoint

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Record Present in Teams Share

Paste Cut Copy Format Painter Clipboard Layout New Slide Reset Section Slides

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Font Paragraph Drawing Shape Fill Shape Outline Shape Effects Arrange Quick Styles Find Replace Select Editing Dictate Sensitivity Designer

1

General introduction – what is the topic?

Why is the topic relevant to the viewer?

What is the problem within the topic?

Your study to address this problem

How does your research fix this problem?

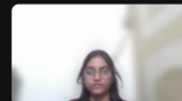
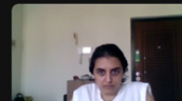
Why should the viewer want to remember your results

Why do your results matter in the context of the wider field?

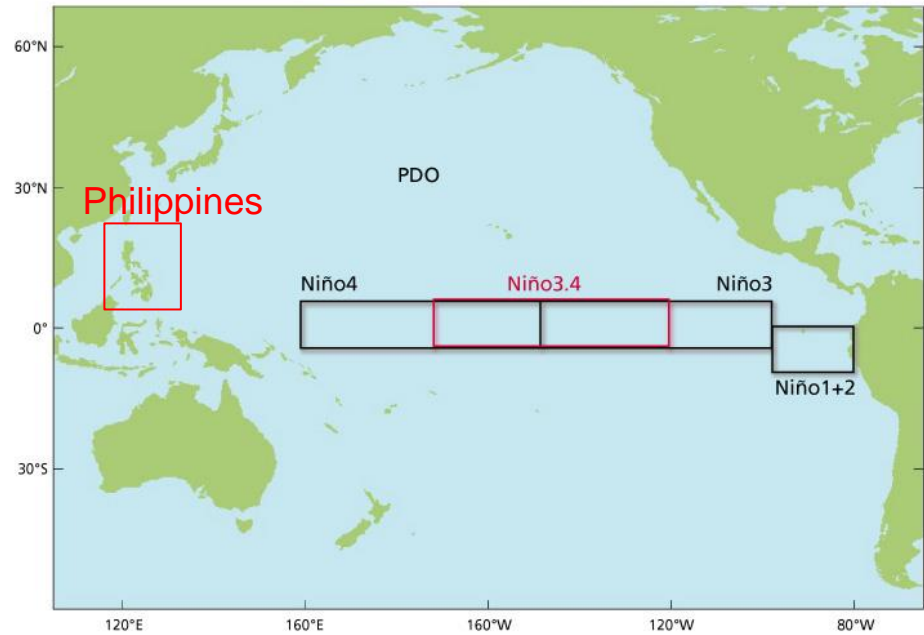
What is the key message to take from your work on the topic/problem?

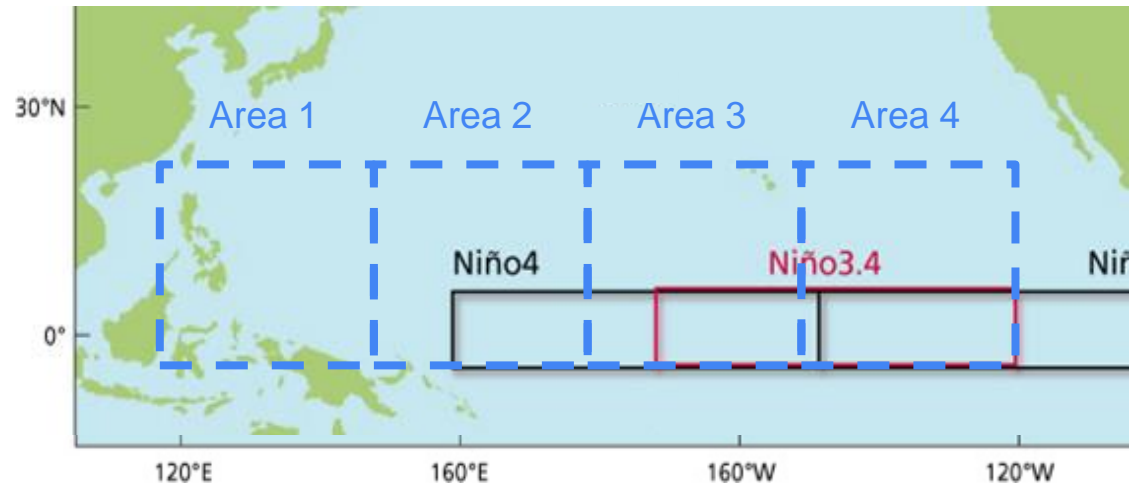
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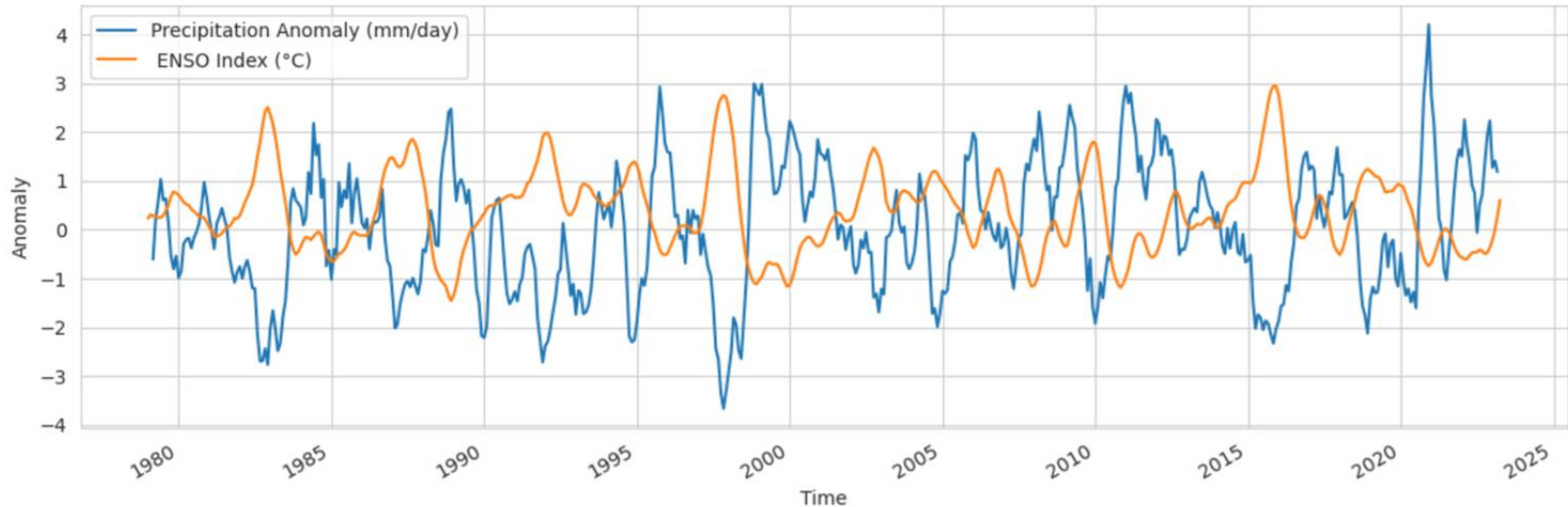




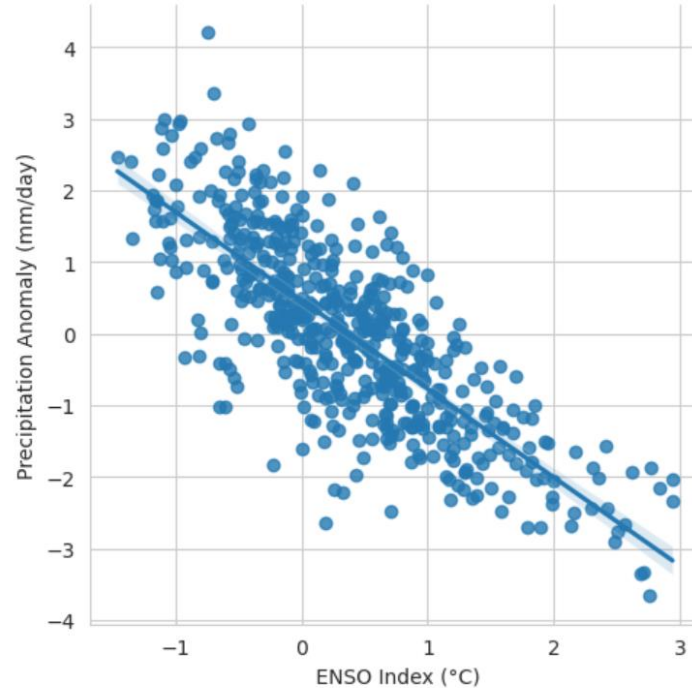
# Time Series Plot of ENSO Anomaly and Precipitation in the Philippines

Observation Data:

1. Extended Reconstructed Sea Surface Temperature (ERSST) v5 by NOAA
2. CMAP Precipitation Data by NOAA



# Correlation between the ENSO Index and Precipitation



Nino 3.4 Region

$$R^2 = 0.61$$

$$R\text{-value} = -0.78$$

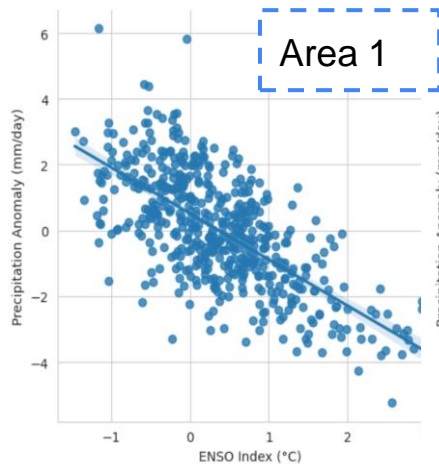
$$y = -1.24x + 0.46$$

$$p\text{-value} = 1.56e-109$$

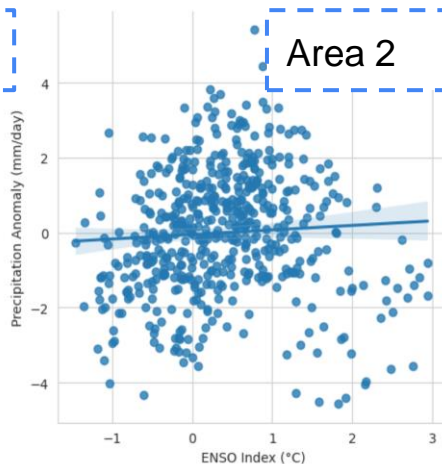


# Region-wise precipitation correlation with ENSO

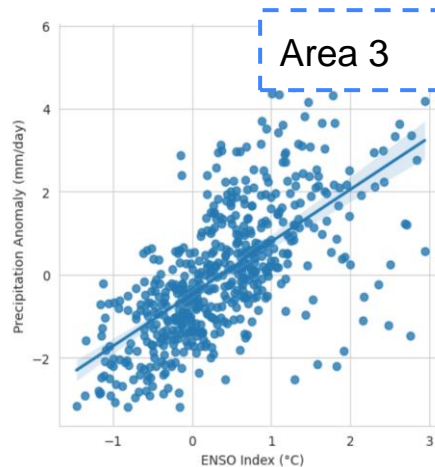
$r = -0.67$   
 $pvalue = 2.46e-71$



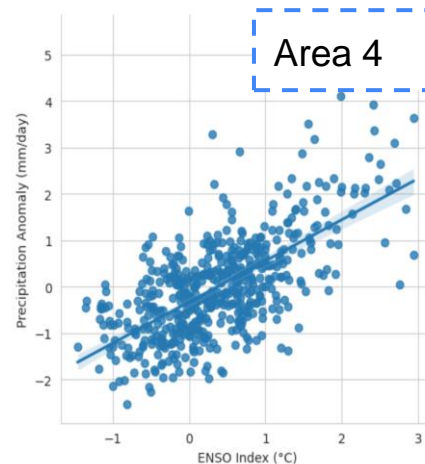
$r = 0.05$   
 $pvalue = 0.17$



$r = 0.64$   
 $pvalue = 1.7e-64$



$r = 0.66$   
 $pvalue = 1.15e-67$

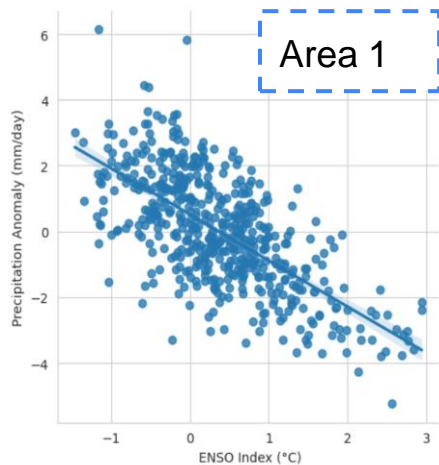




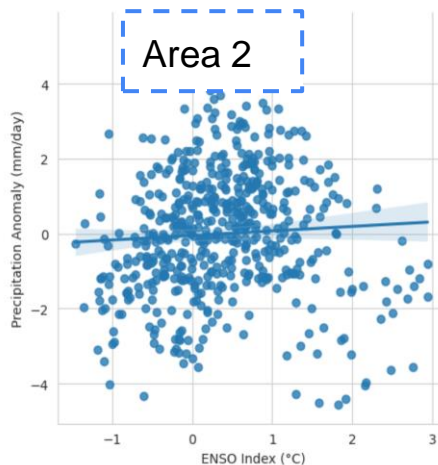


# Region-wise precipitation correlation with ENSO

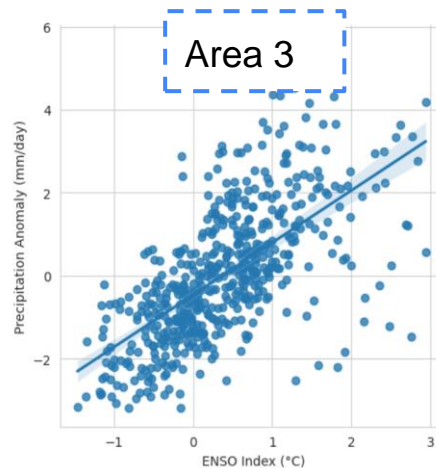
$r = -0.67$   
 $pvalue = 2.46e-71$



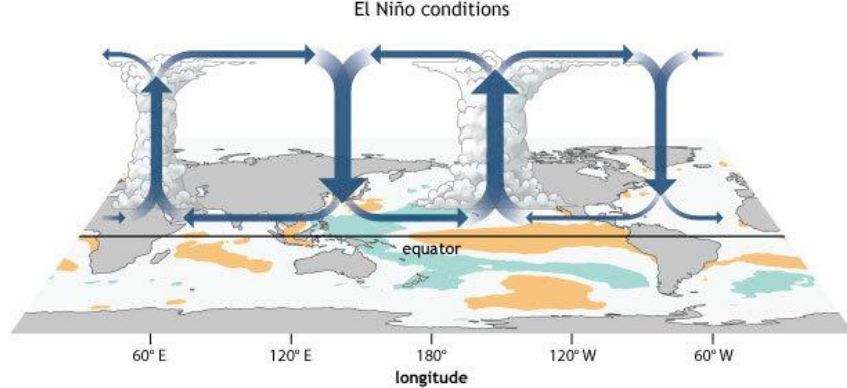
$r = 0.05$   
 $pvalue = 0.17$



$r = 0.64$   
 $pvalue = 1.7e-64$

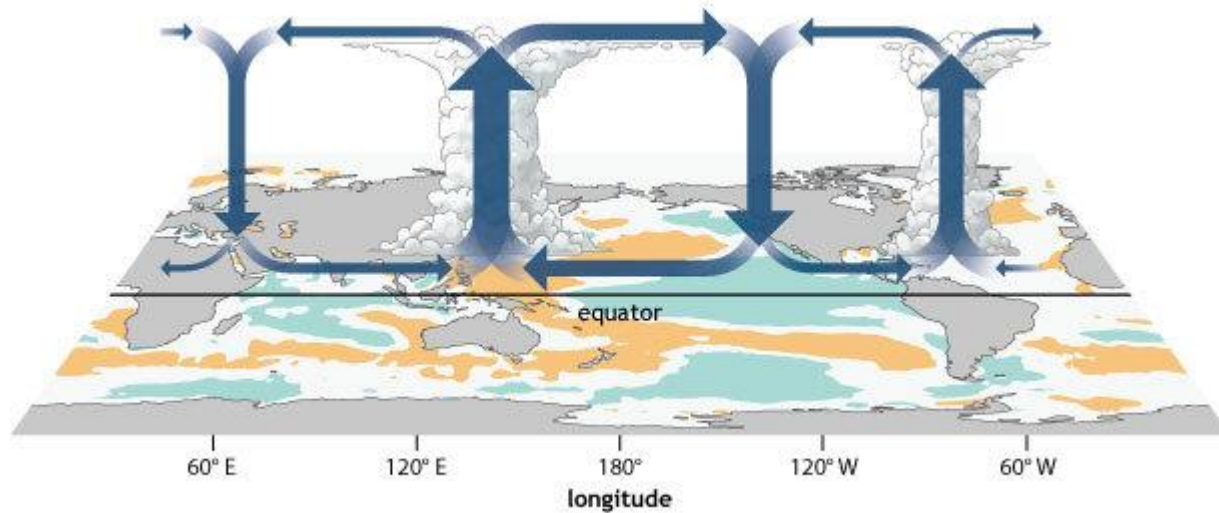


## Walker Circulation

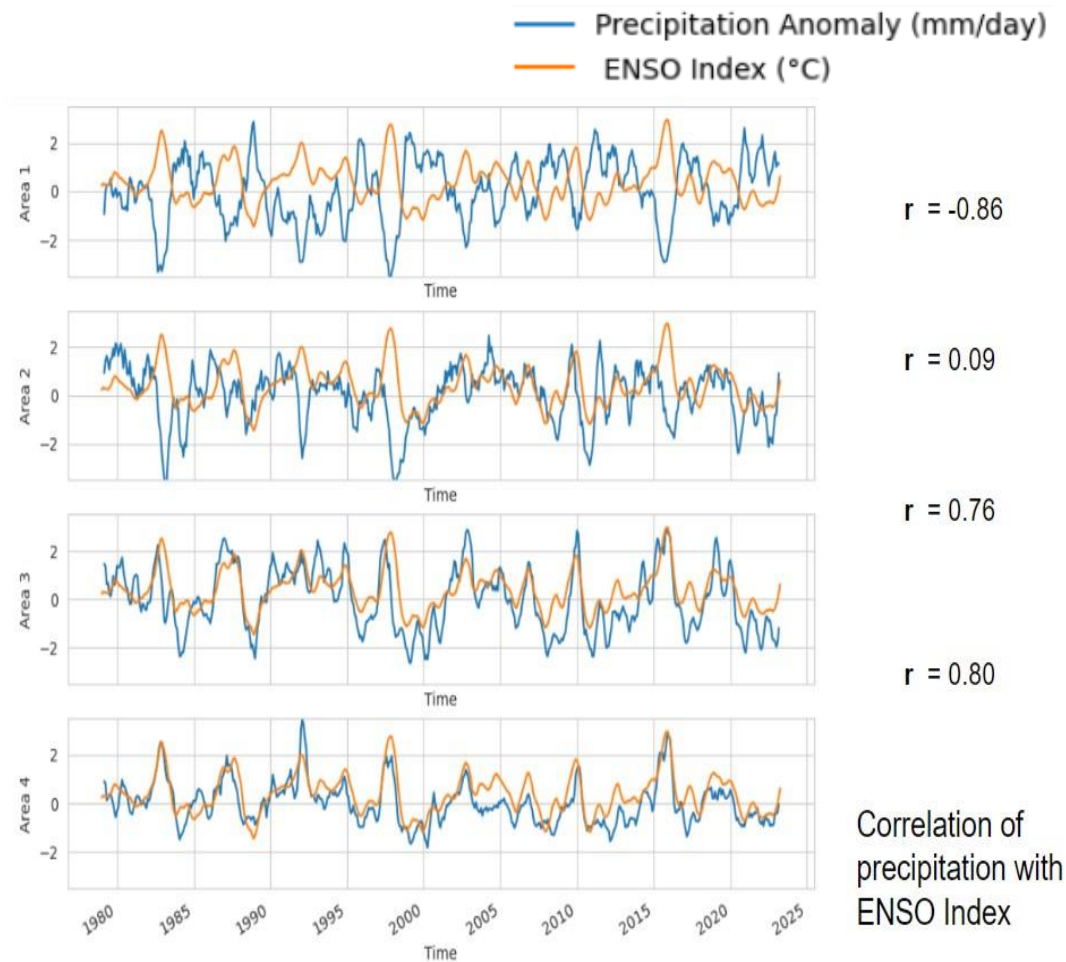
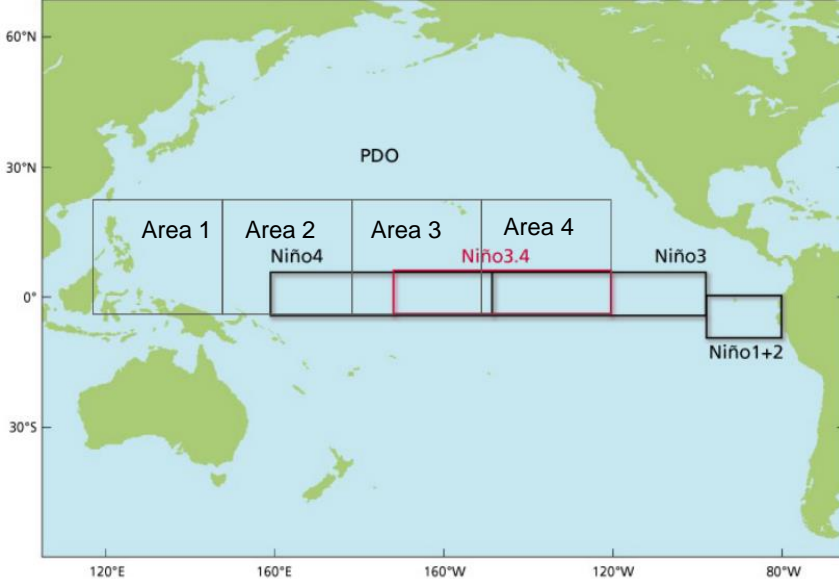


NOAA Climate.gov

## La Niña conditions



NOAA Climate.gov



# Correlation of precipitation with ENSO Index

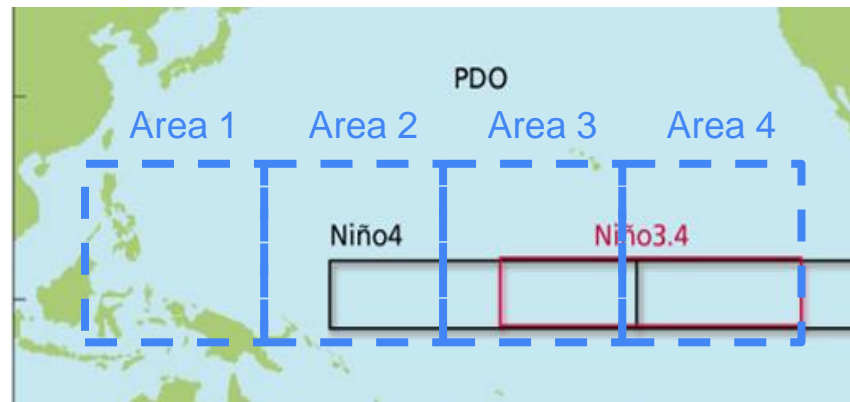
— Precipitation Anomaly (mm/day)  
— ENSO Index (°C)

$r = -0.86$

$r = 0.09$

$r = 0.76$

$r = 0.80$



# Let's learn about climate!

- Here's a cool thing about climate
  - Now let's look at some Python code
    - Try it out on your own
- More about climate...



[Speaker  
Zoom  
video]

# New section

