# Julia Language Final Report

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Julia code

Data description of Taiwan_rainfall_data_1998_2016_monthly.mat

In this MAT file, we have the variables shown in below:

| Name	description	size
rain_timeseries	Taiwan rainfall time series	228x1
time	Time in year corresponding to the time series	228x1
yr	Corresponding year to the time series	228x1
mon	Corresponding month to the time series	228x1
rain	Spatial rainfall of Taiwan in each month from 1998 to 2016. (Monthly data)	15x9x228
xi	x-grid points corresponding to the spatial rainfall	15x9
yi	y-grid points corresponding to the spatial rainfall	15x9
xlon_Taiwan_coast	Longitudes of Taiwan coast for plotting maps	16x1
ylat_Taiwan_coast	Latitudes of Taiwan coast for plotting maps	16x1

1) Try to reproduce two figures shown above. For the left figure, it is the total mean of rainfall on each grid. For the right figure, it is plotted by using the MATLAB variable called "rain_timeseries" in the given mat file (see the table next page). Remember to add in some labels to the figures.

Longterm mean of rainfall (mm/hr)

Longterm time-series of Taiwan rainfall
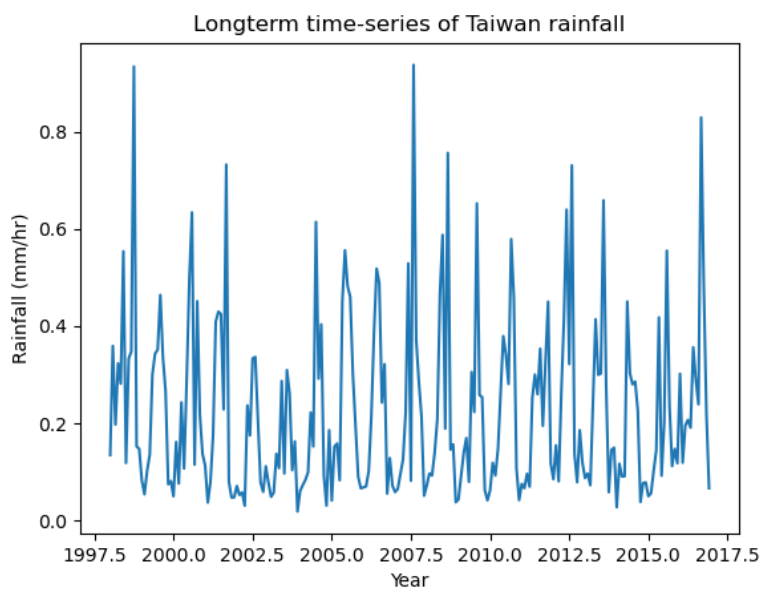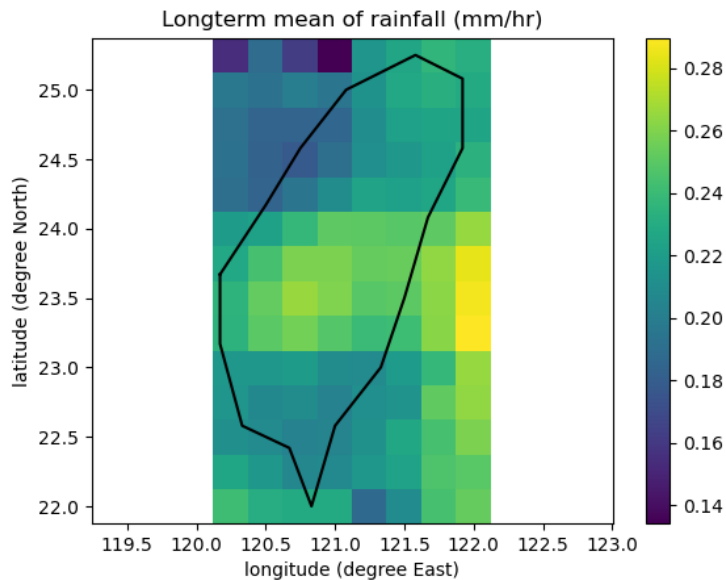
2) What does the spatial distribution of Taiwan rainfall look like in January and June? To solve this question, we first need to calculate the average of rainfall on each grid in January and June. Then, plot a figure with two sub-plots to separately show the spatial distribution of rainfall in January and June. Remember to add in some labels to the sub-plots.
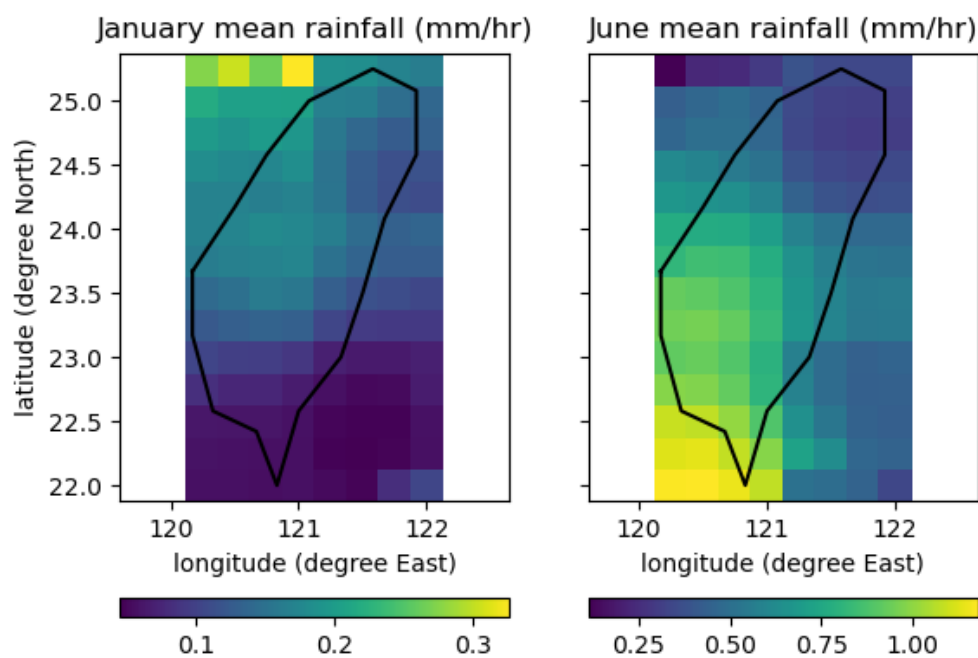
3) In which months that we generally have the maximum and minimum rainfall in a year? (Need to prove and show the answer in a figure)
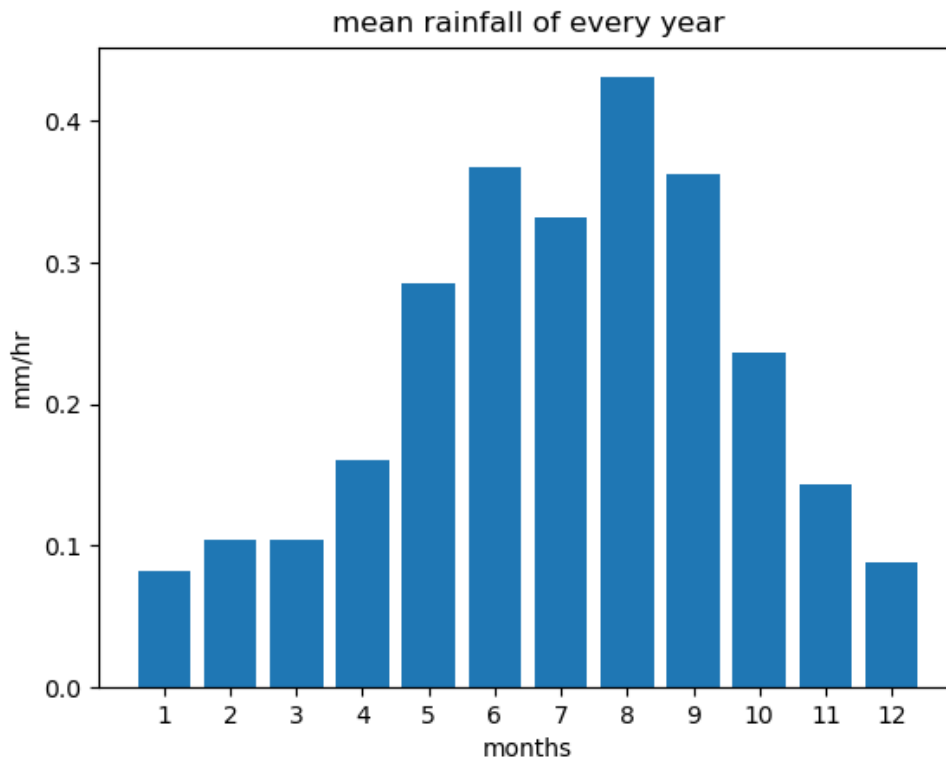
maximum rainfall：August

minimum rainfall：January

4) In which year that we have the most rainfall in June? (Need to prove and show the answer in a figure)
2012 have the most rainfall in June.

total rainfall of June per year