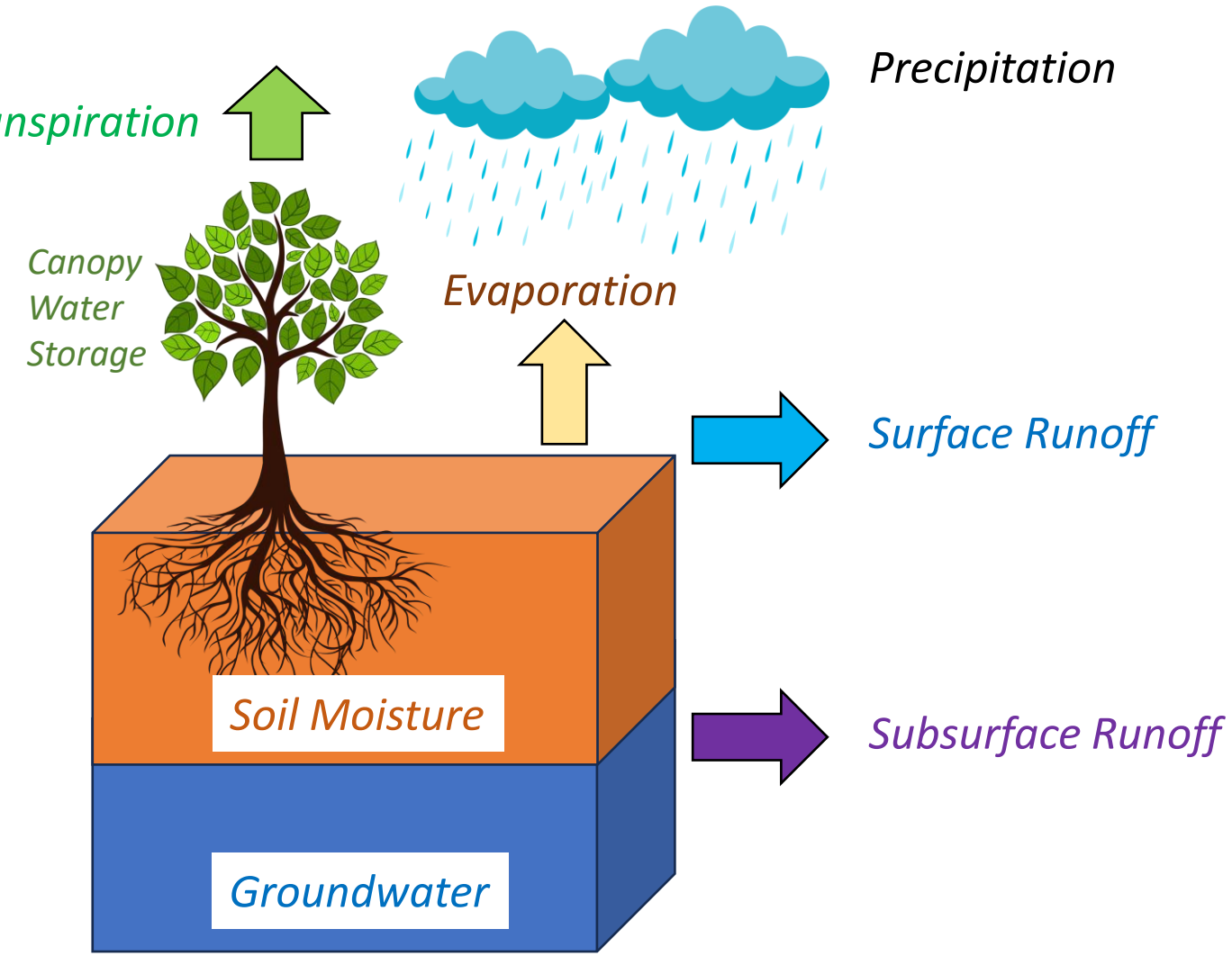
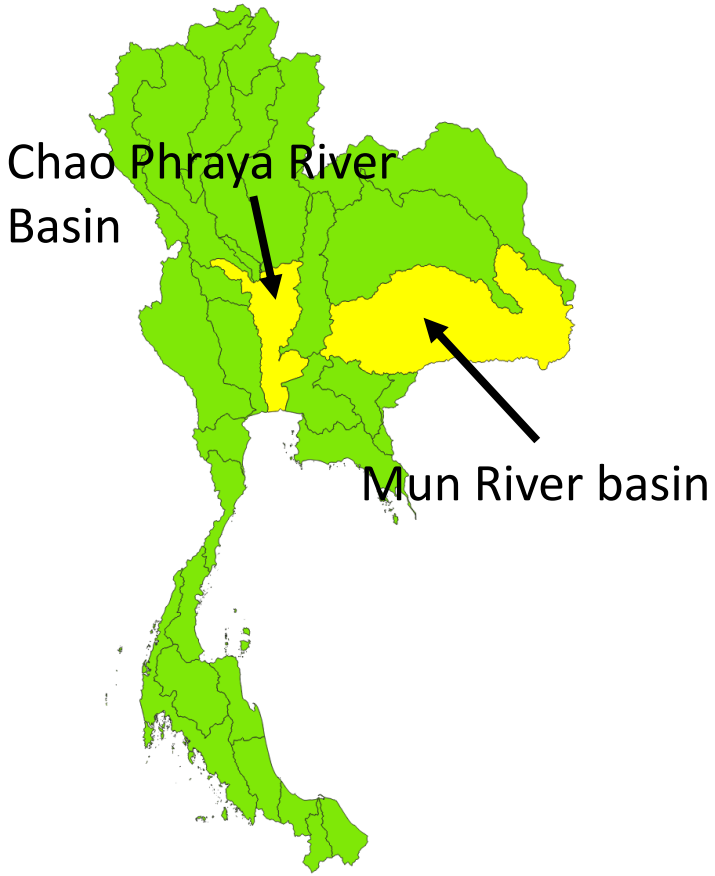
Assignment 2

Evapotranspiration =
Evaporation + Transpiration



Datasets



- Soil moisture storage (m)
- Groundwater storage (m)
- Evapotranspiration (mm/s)
- Plant transpiration (mm/s)
- Soil evaporation (mm/s)
- Surface runoff (mm/s)
- Subsurface runoff (mm/s)
- Canopy water storage (mm)

YYYY	MM	CHAOPHRA	MUN
2003	1	0.4257710	0.3871839
2003	2	0.4251888	0.3865596
2003	3	0.4244977	0.3858303
2003	4	0.4237257	0.3850391
2003	5	0.4229594	0.3842337
2003	6	0.4222015	0.3834304
2003	7	0.4214166	0.3825931
2003	8	0.4208547	0.3821021
2003	9	0.4208147	0.3827818
2003	10	0.4208204	0.3840950
2003	11	0.4207344	0.3845263
2003	12	0.4204120	0.3842760
2004	1	0.4199456	0.3837371
2004	2	0.4194230	0.3831000
2004	3	0.4188715	0.3824327
2004	4	0.4182993	0.3817622
2004	5	0.4177459	0.3811440
2004	6	0.4173092	0.3804917
2004	7	0.4168569	0.3798812
2004	8	0.4164914	0.3799368
2004	9	0.4164182	0.3811376
2004	10	0.4167532	0.3819070
2004	11	0.4169744	0.3820506

Some Useful Numpy Functions

- median: Compute the median along the specified axis.
- average: Compute the weighted average along the specified axis.
- mean: Compute the arithmetic mean along the specified axis.
- std: Compute the standard deviation along the specified axis.
- var: Compute the variance along the specified axis.
- corrcoef: Return Pearson product-moment correlation coefficients.
- correlate: Cross-correlation of two 1-dimensional sequences.
- cov: Estimate a covariance matrix, given data and weights.
- histogram: Compute the histogram of a dataset.
- percentile: Compute the q-th percentile of the data along the specified axis.
- quantile: Compute the q-th quantile of the data along the specified axis.
- cumsum: Return the cumulative sum of the elements along a given axis.

Report

- Select two or more variables and explain their connections.
- Write a Jupyter Notebook report to describe your datasets.
- Use ten or more statistical metrics to support your analysis.
- The report should include:
  - Background: What is it? What are you trying to do? You can also include embedded figures here (markdown cell)
  - Analysis: Python code to perform statistical analysis or plot. Cross-comparison between basins or variables is highly recommended. (code cell)
  - Result: Figure or statistical values (results from code cell)
  - Discussion: What does your result represent? (markdown cell)
- Submit your report by Friday, October 10.