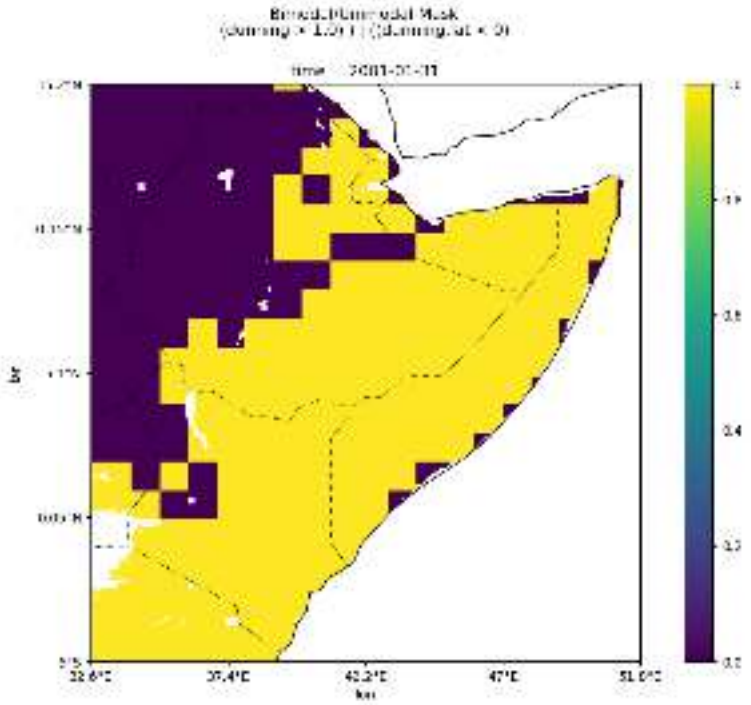
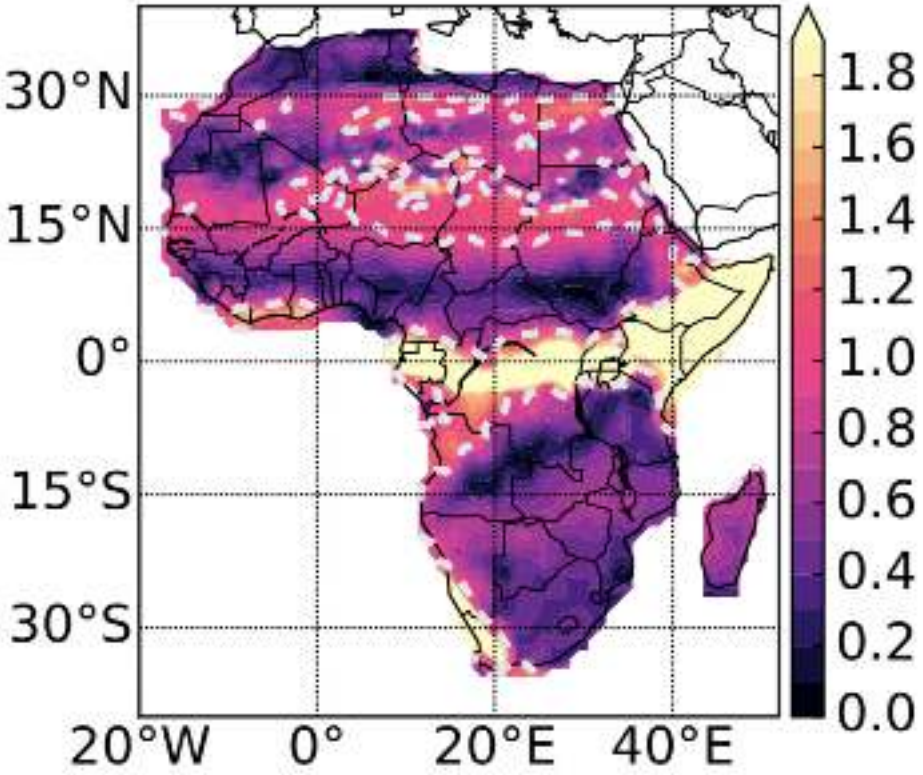
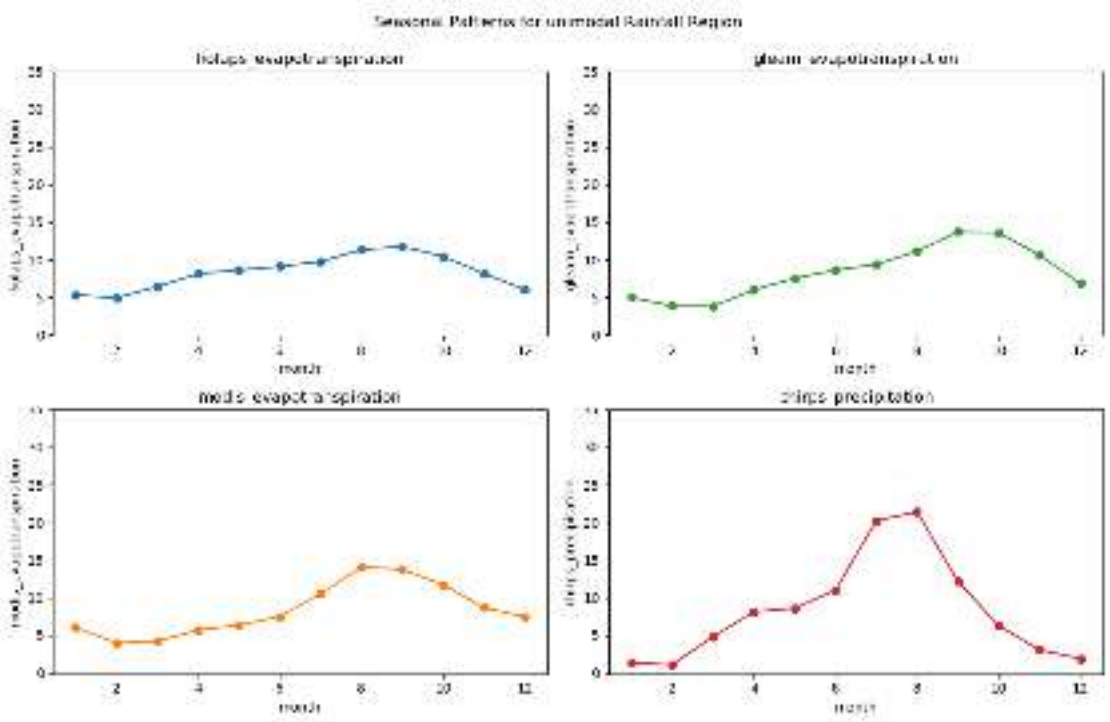
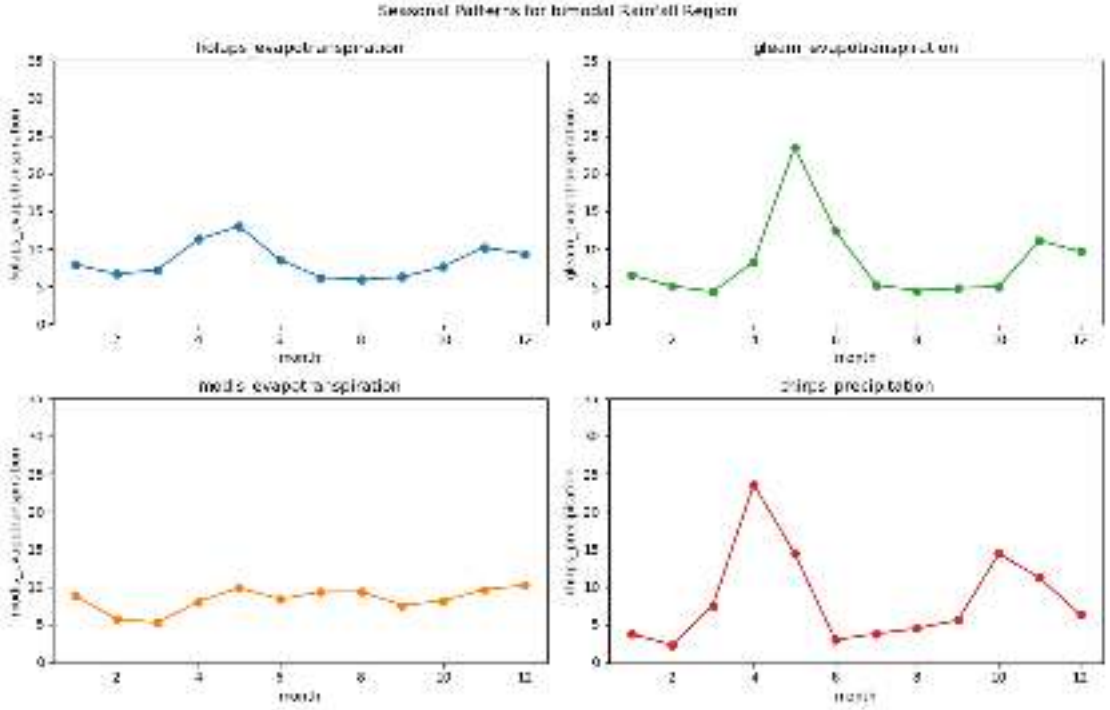
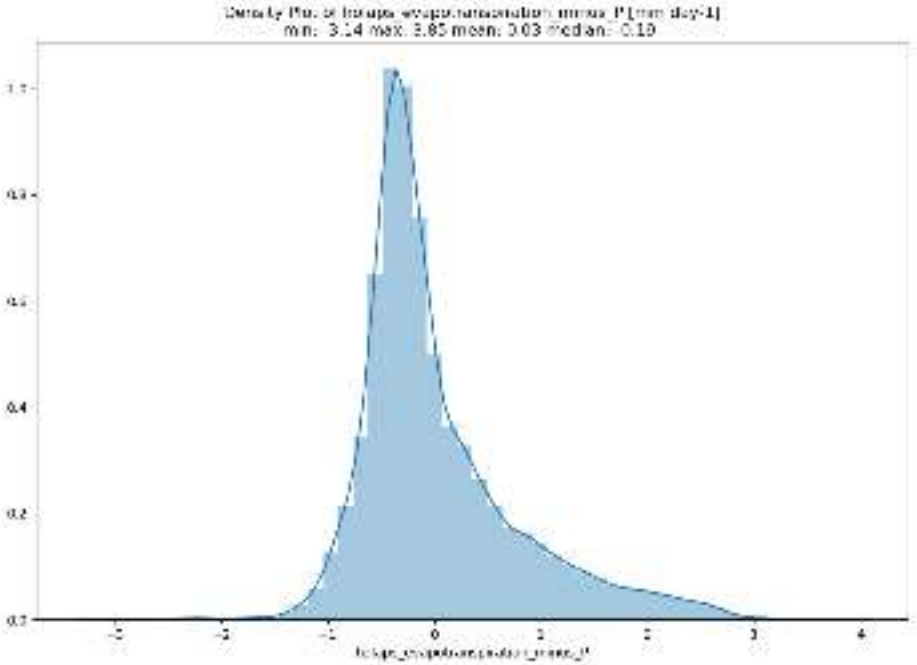

Bimodal Rainfall Mask
time 2001-01-01
lat
lon
32.6°E
37.4°E
42.2°E
47°E
51.8°E

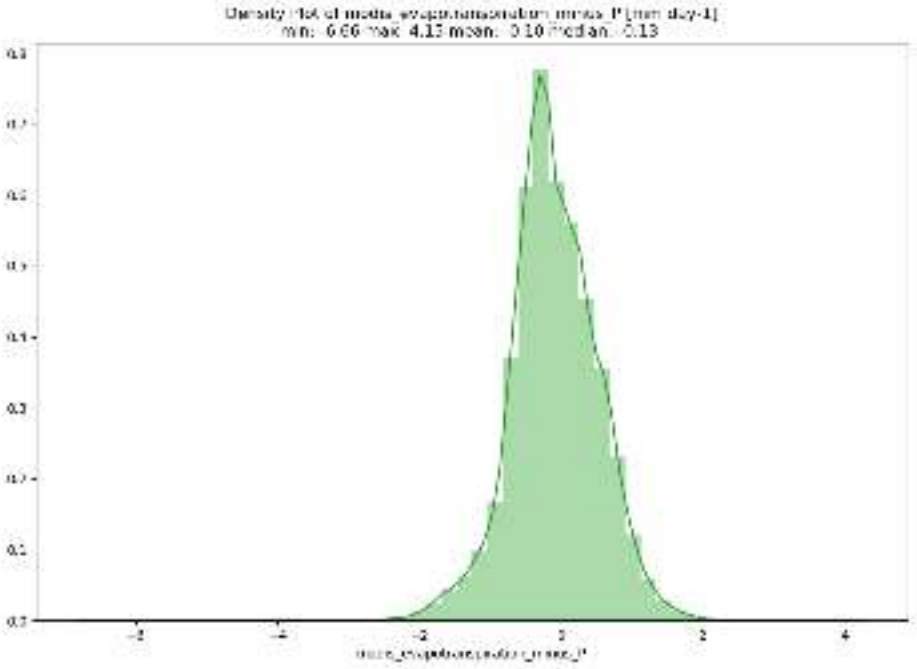

30°N
15°N
0°
15°S
30°S
20°W
0°
20°E
40°E
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0

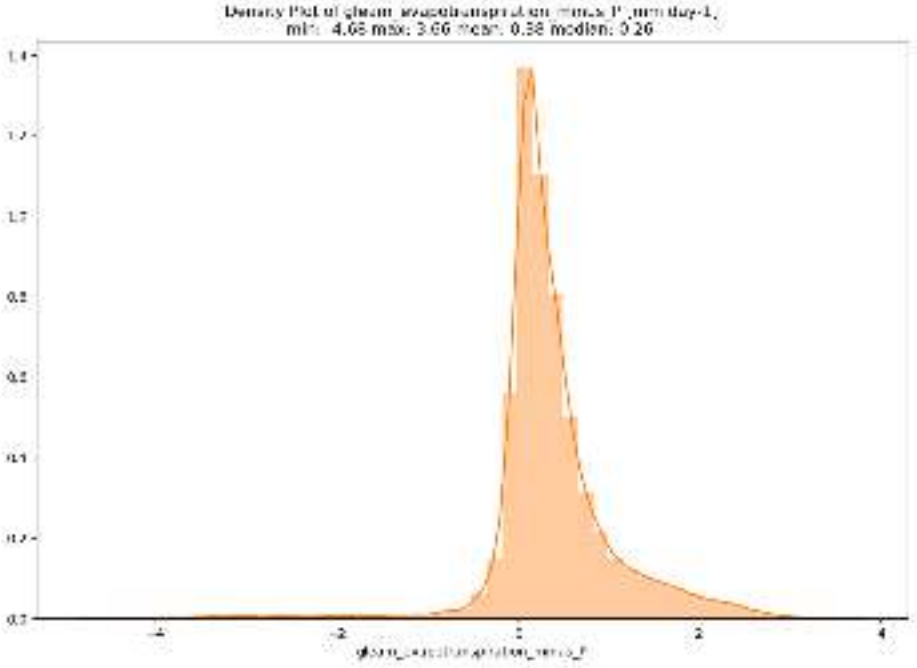

Seasonal Patterns for unimodal Rainfall Region
noaps evapotranspiration
gleam evapotranspiration
modis evapotranspiration
chirps precipitation
month


Seasonal Patterns for bimodal Rainfall Region
noaps evapotranspiration
gleam evapotranspiration
modis evapotranspiration
chirps precipitation
month

5 yr P-E







silent presenter

intro
methods
results
discussion
plots

GLEAM offers the most consistent **evaporation product** over East Africa when validated against a simple **water balance calculation**

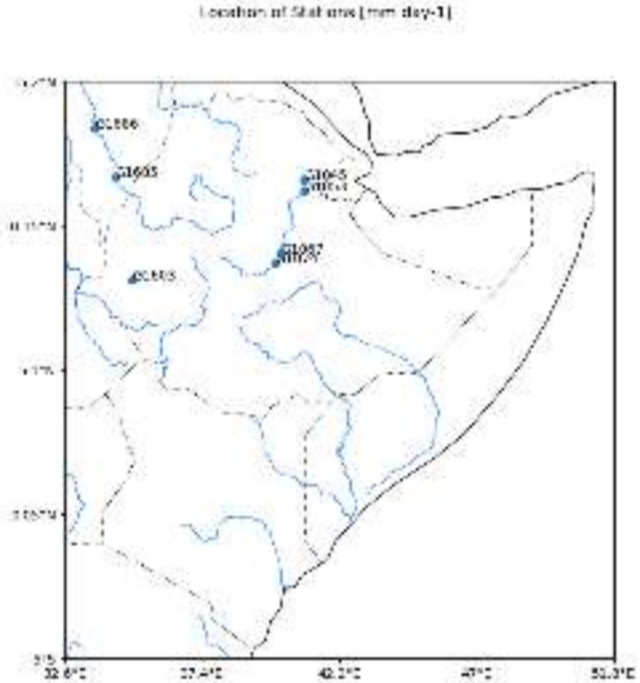
KEY FIGURE

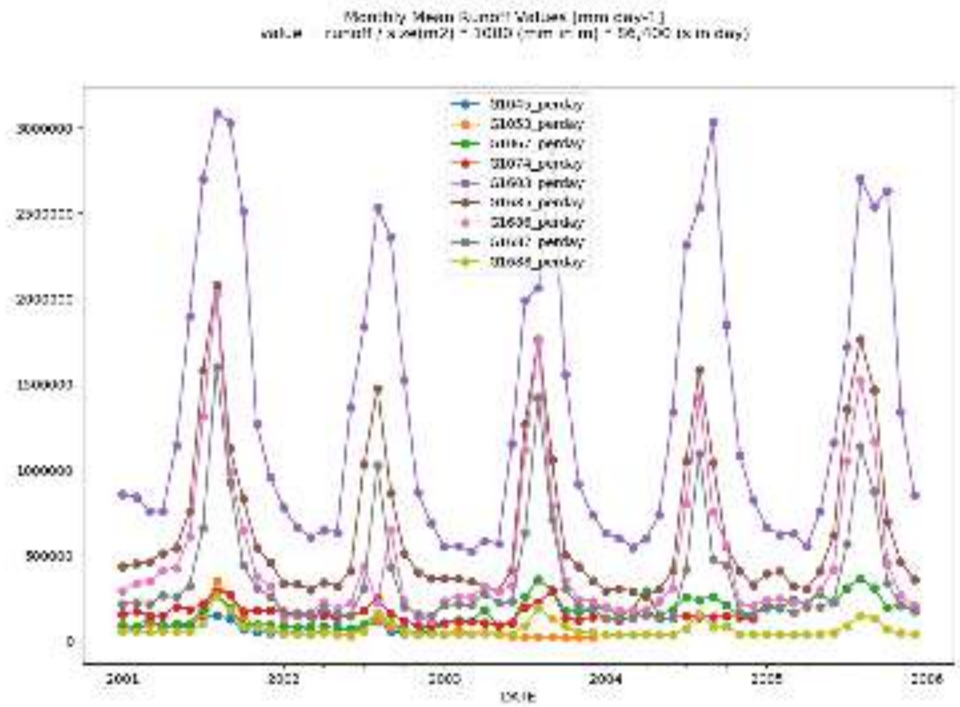
scrapbook

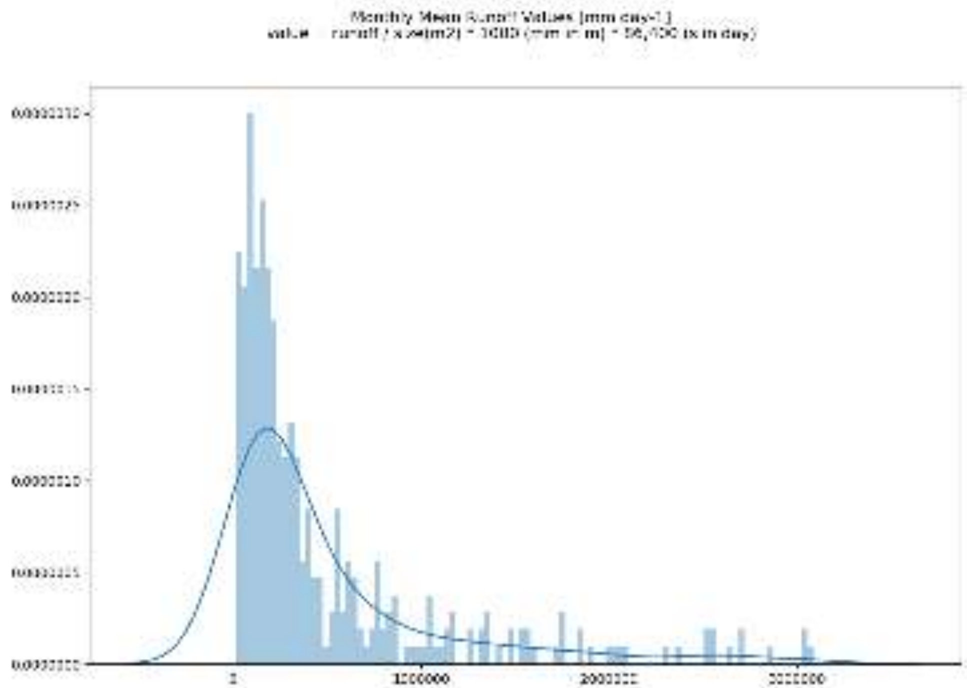
tables
references
coefficients
methods

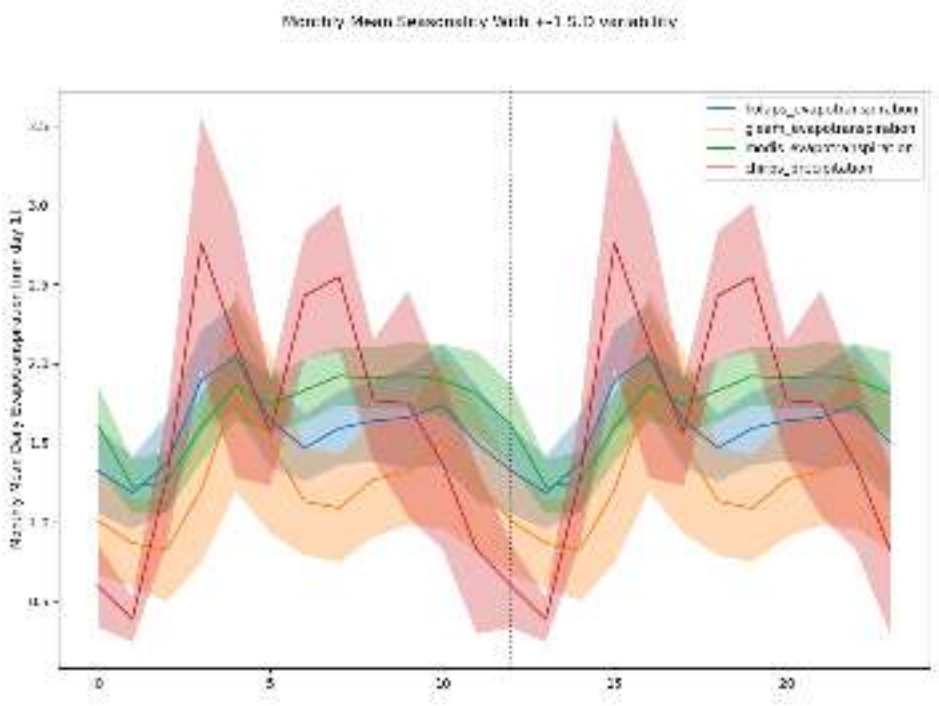
The station runoff is too high

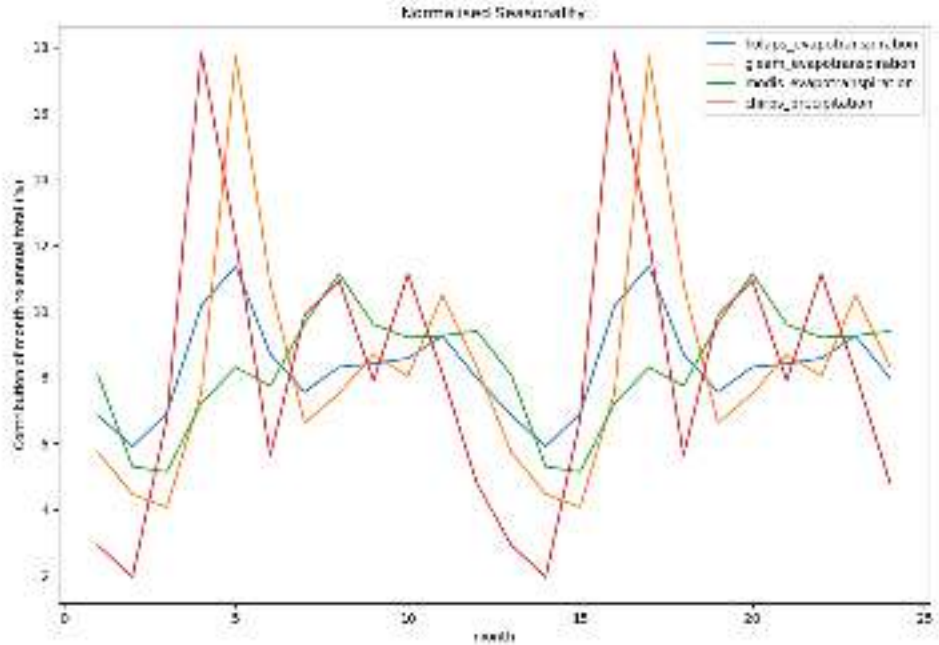
```python
# normalise
def calculate_flow_per_day(df, lookup_gdf):
    """ convert flow in m3/s => mm/day in new columns, `colnames` = ID + '_perday'

    value = runoff / size(m2) * 1000 (mm in m) * 86,400 (s in day)
    Steps:
    1) normalise per unit area
        runoff (m3) / m2
    2) Convert m => mm
        * 1000
    3) convert s => days
        * 86,400
    4)
    """
    for ID in lookup_gdf.ID:
        drainage_area = lookup_gdf.query(f"ID == '{ID}'").DrainArLDD.values[0]
        # TODO: what units is DrainArLDD in?
        # df[ID+'_norm'] = df[ID].apply(lambda runoff: ((runoff*1e9) / 86_400) / drainage_area )
        df[ID + '_perday'] = df[ID].apply(lambda runoff: ((runoff/(drainage_area)) * 86_400 * 1000)  )

    return df
```

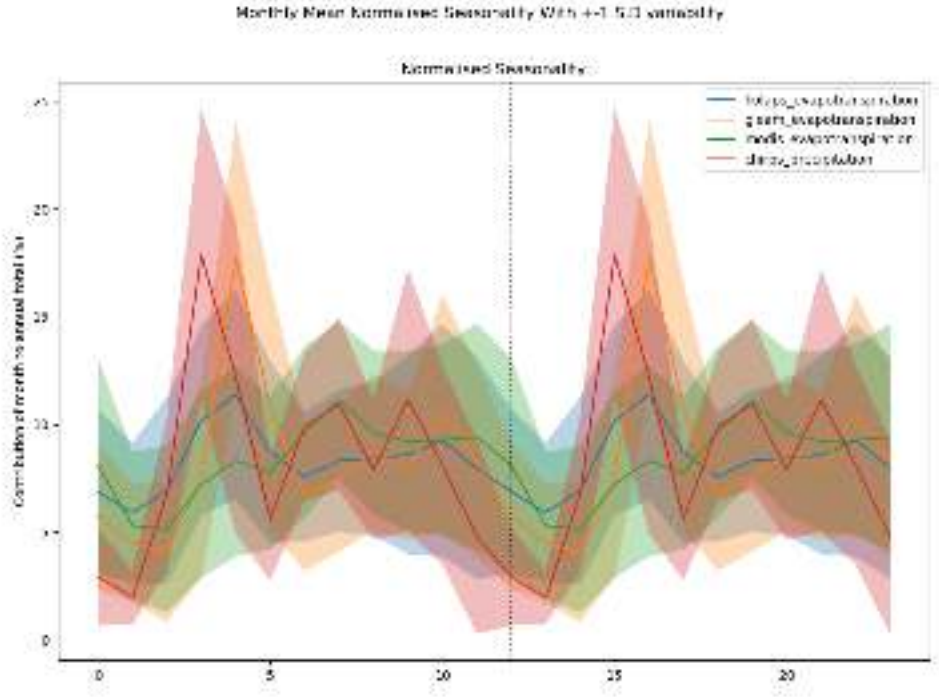


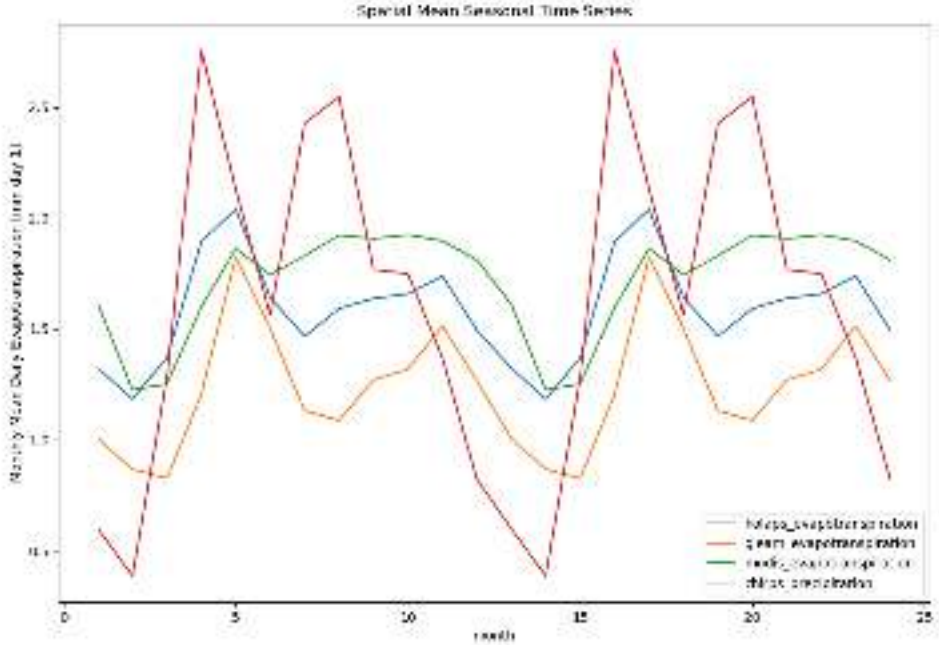


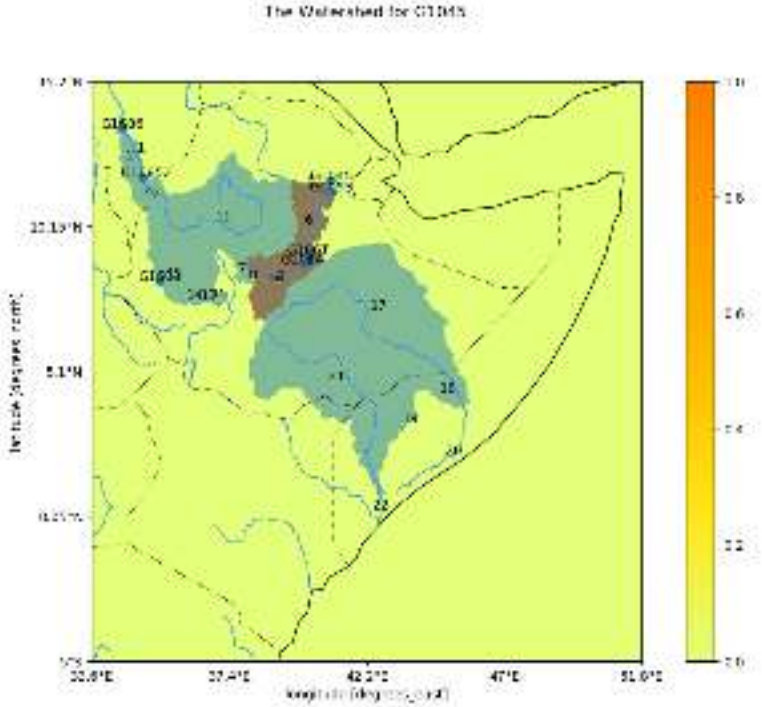


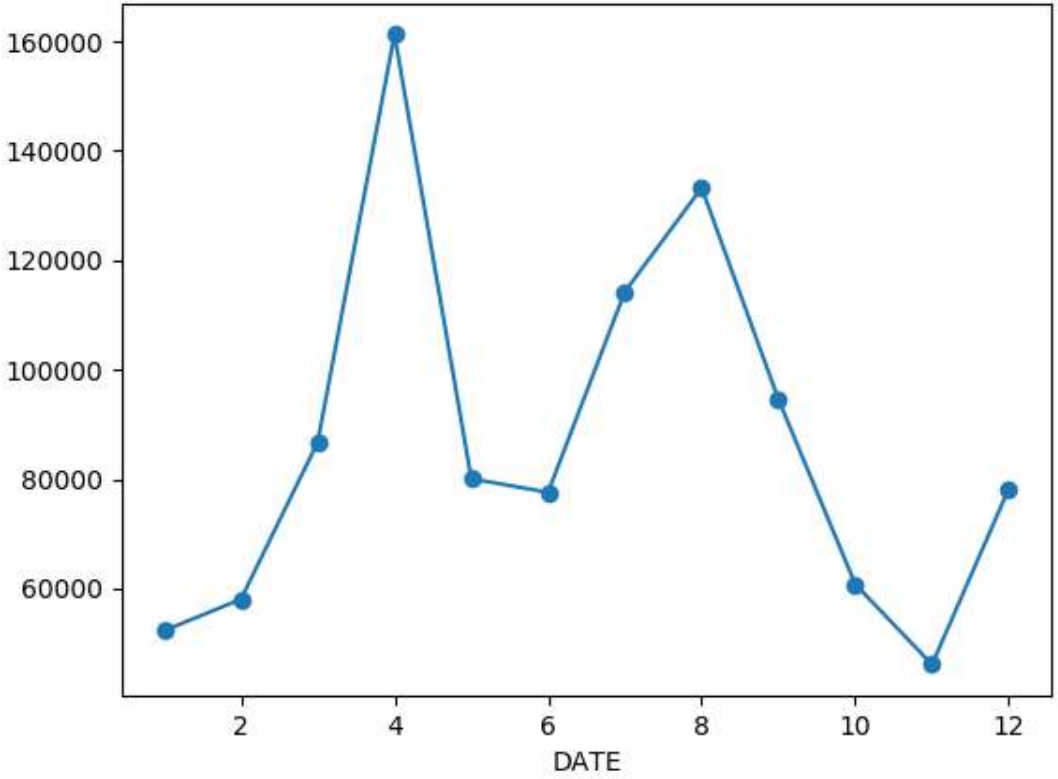


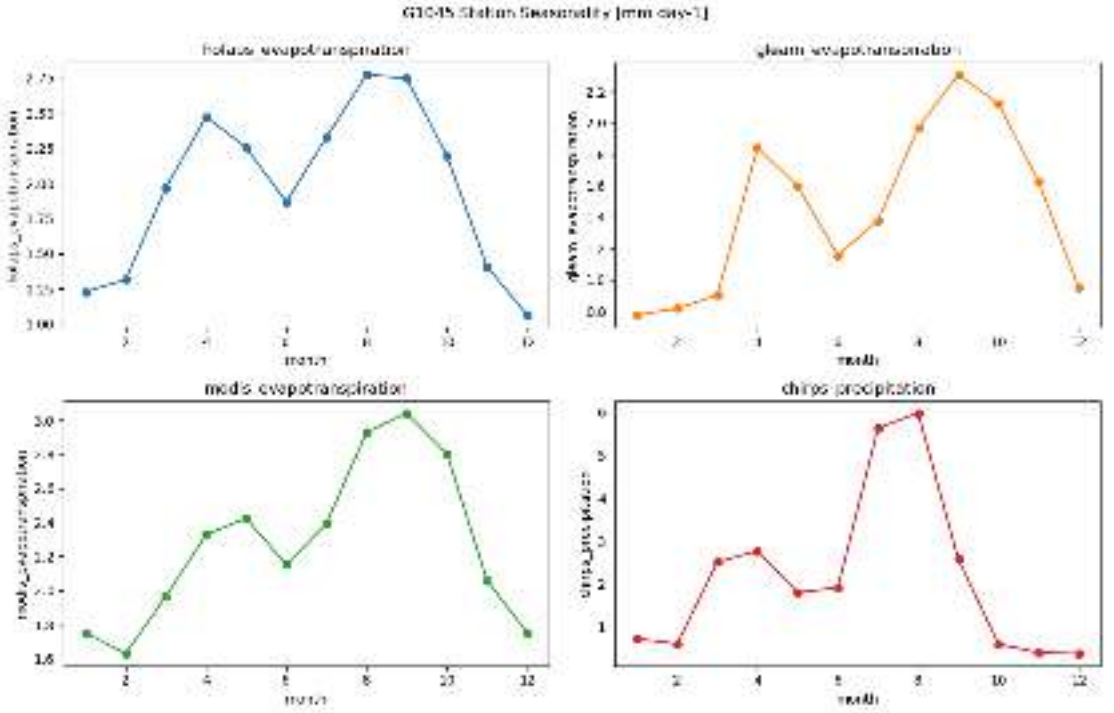


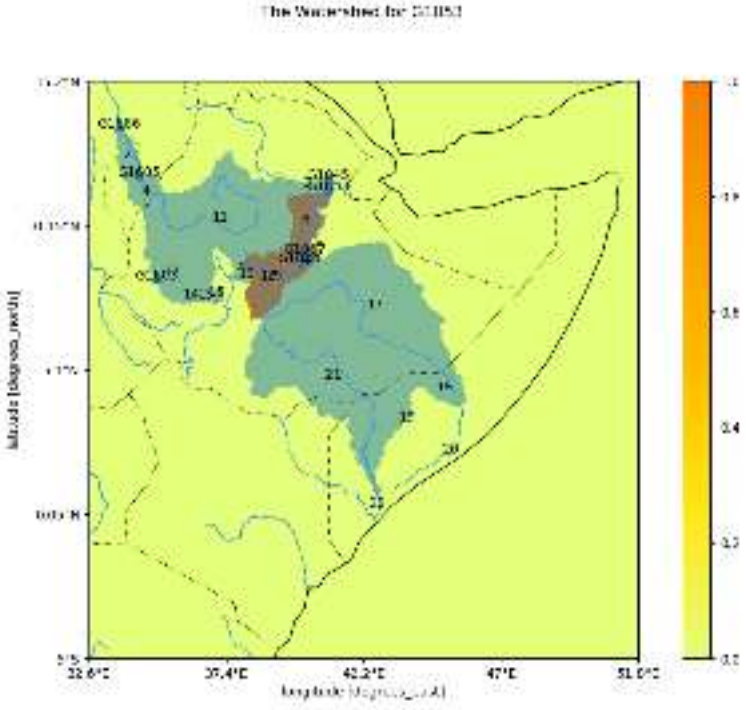


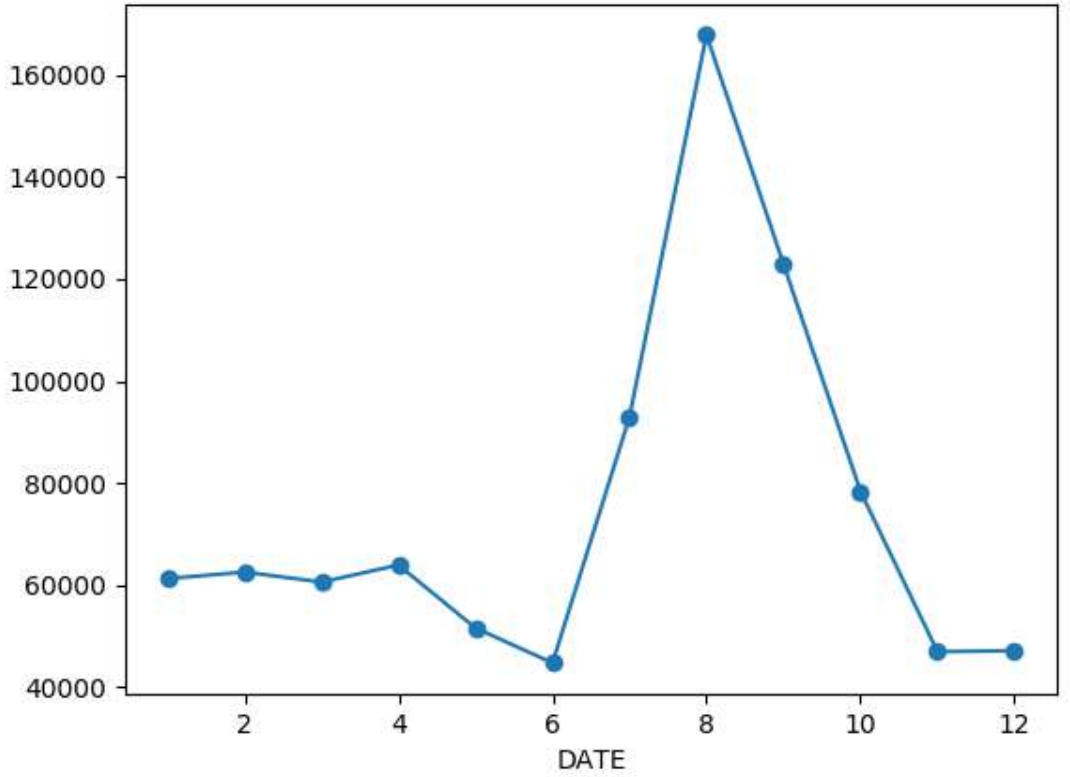


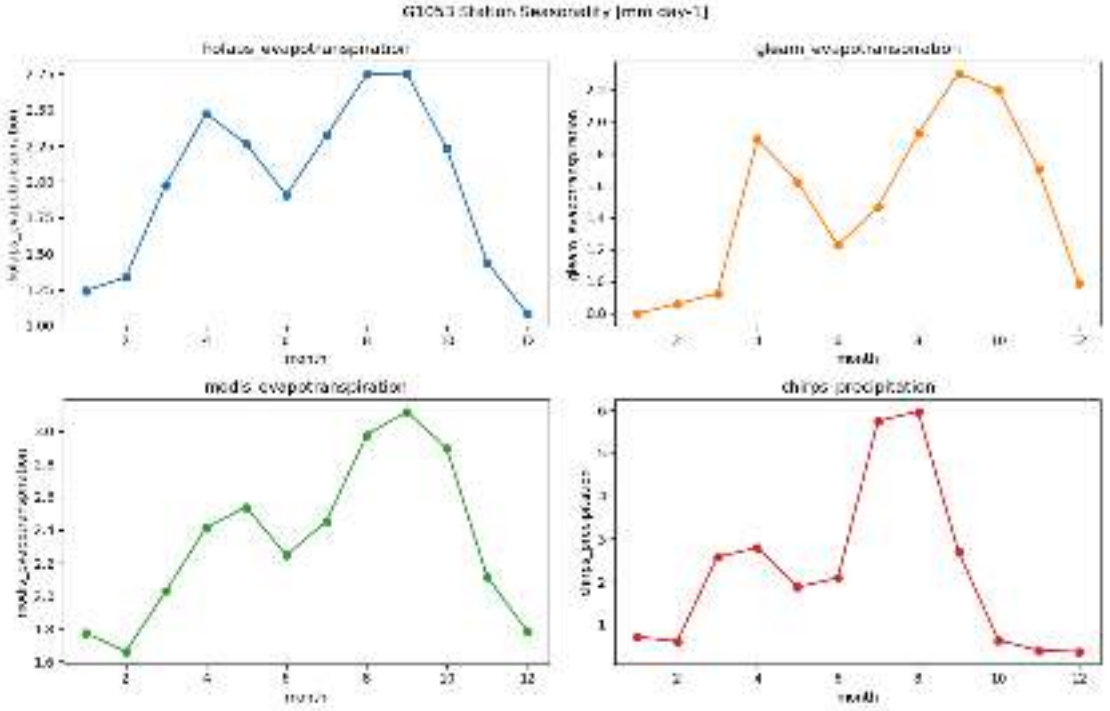


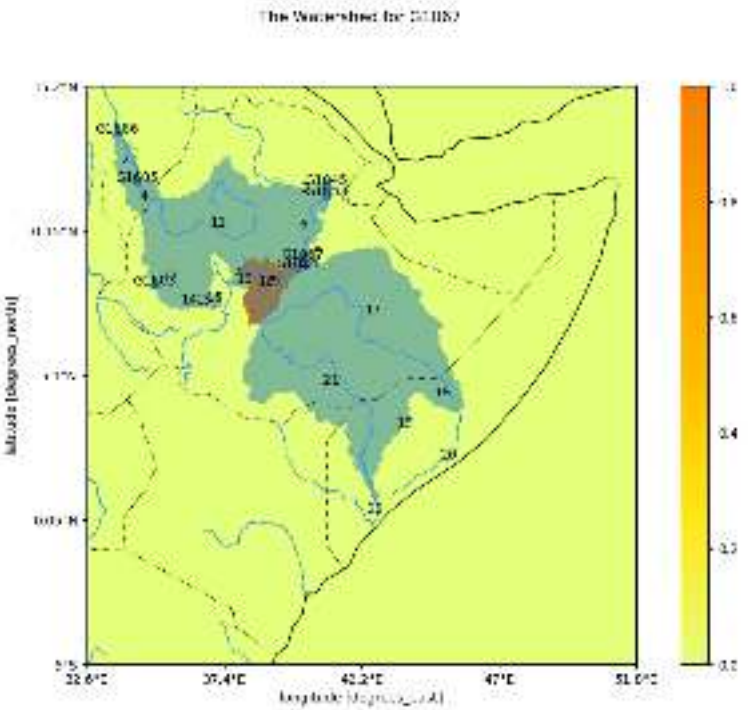

160000
140000
120000
100000
80000
60000
2
4
6
8
10
12
DATE

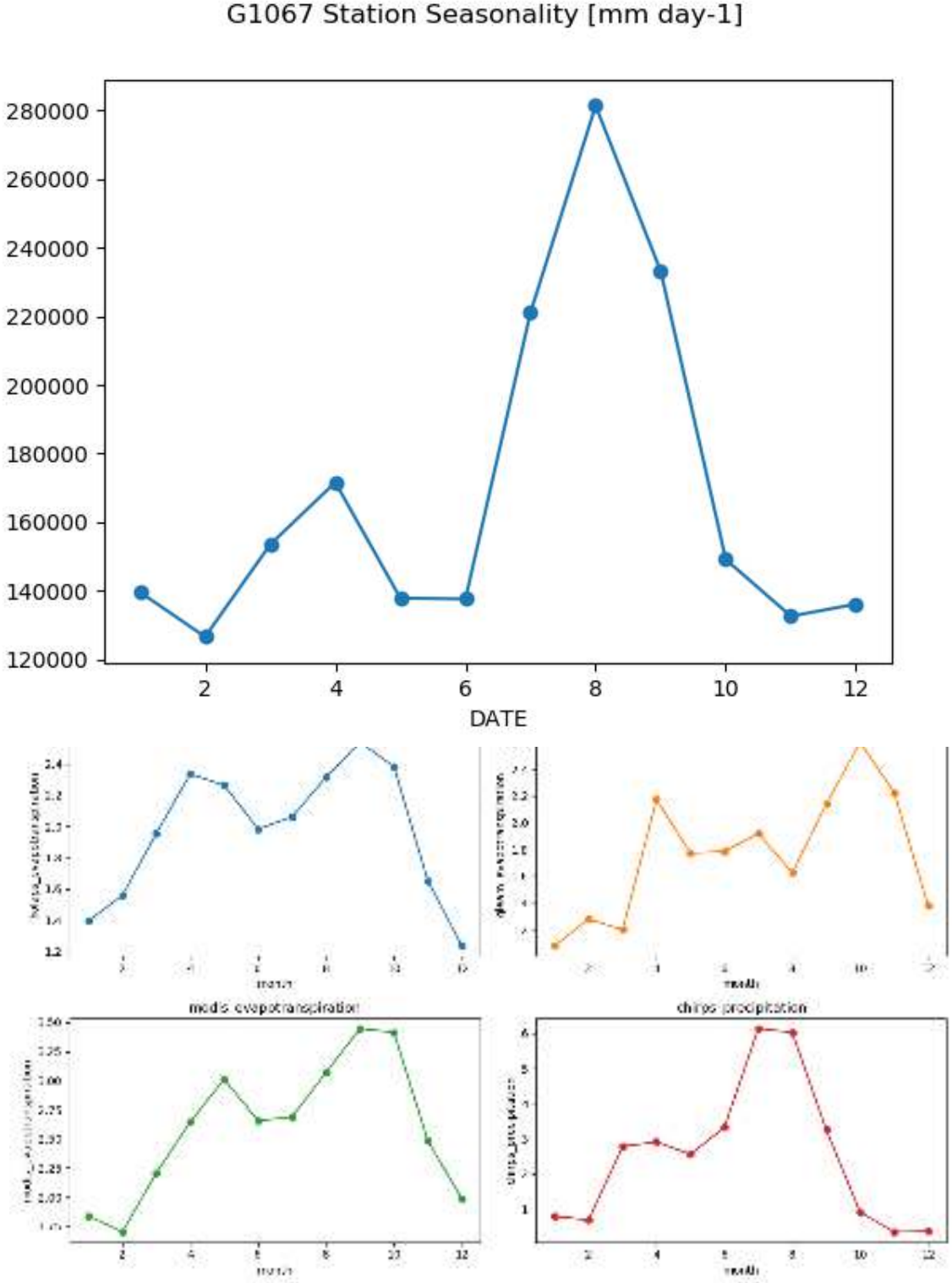

G1045 Station Seasonality [mm day-1]
Potato evapotranspiration
gleam evapotranspiration
modis evapotranspiration
chirps precipitation

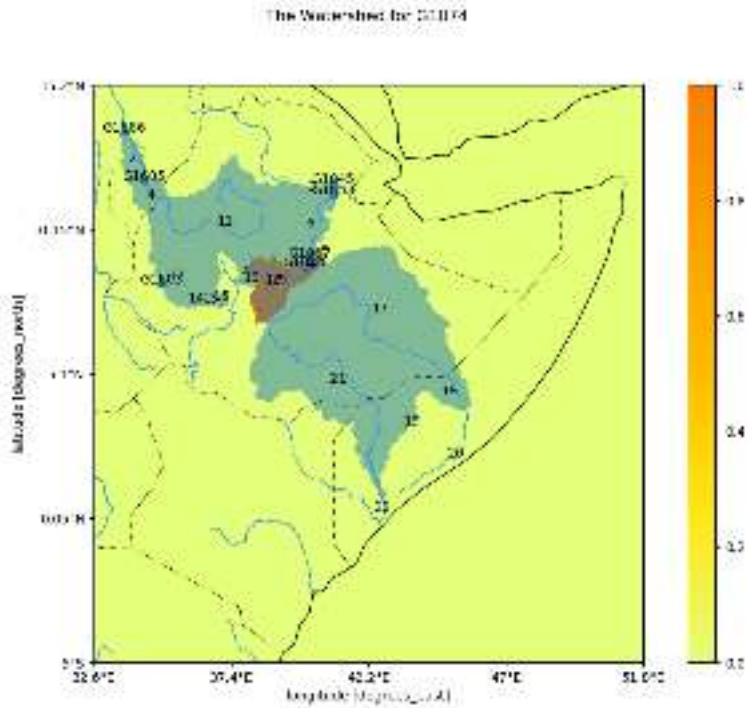


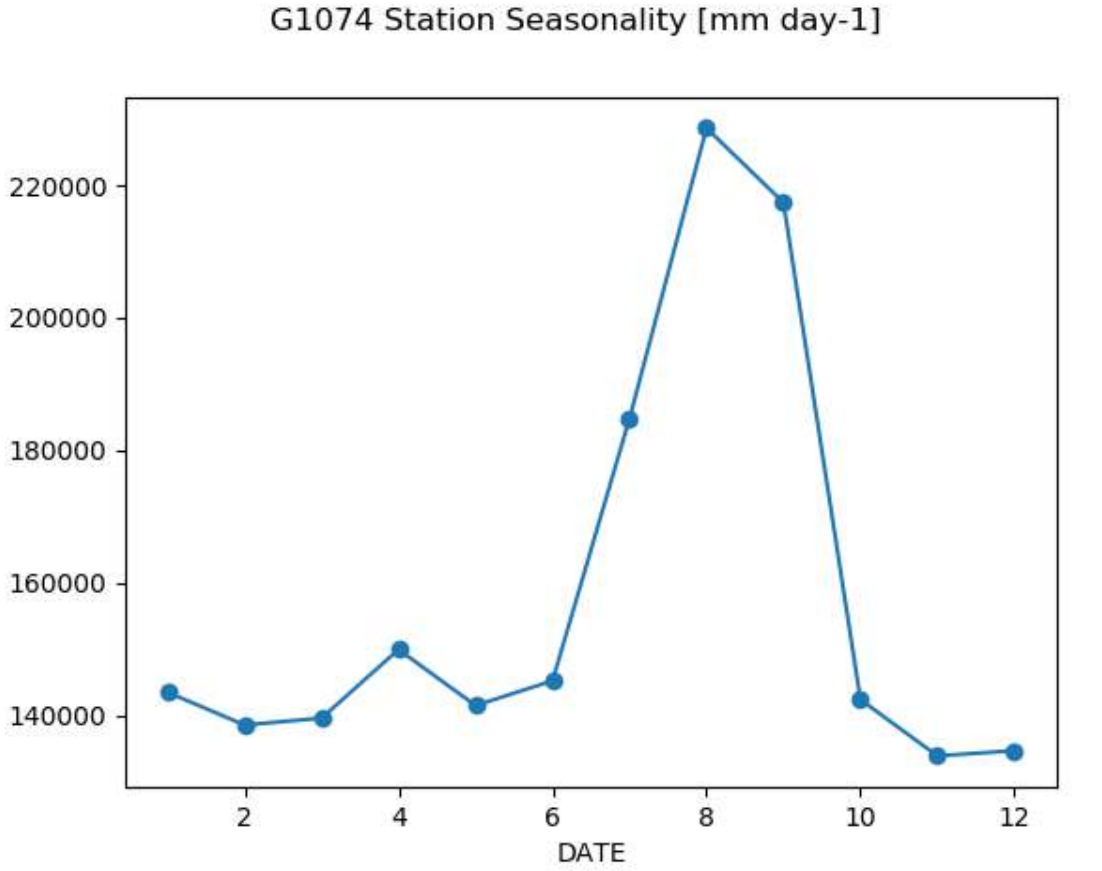

160000
140000
120000
100000
80000
60000
40000
2
4
6
8
10
12
DATE

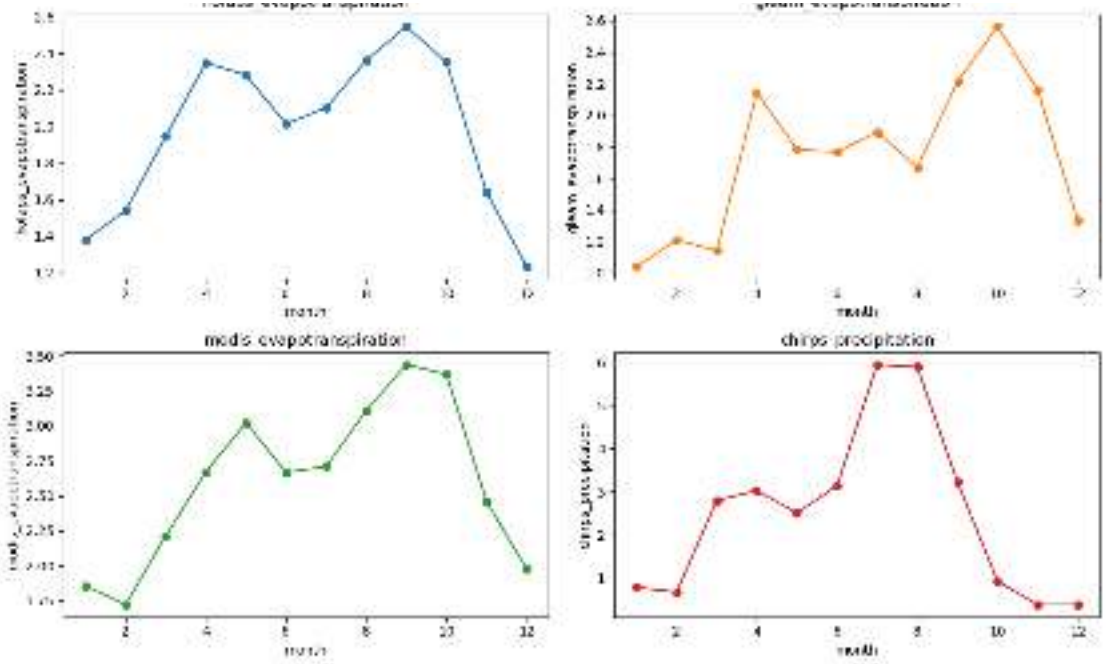

GTCS3 Station Seasonality [mm day-1]
Potato evapotranspiration
gleam evapotranspiration
modis evapotranspiration
chirps precipitation

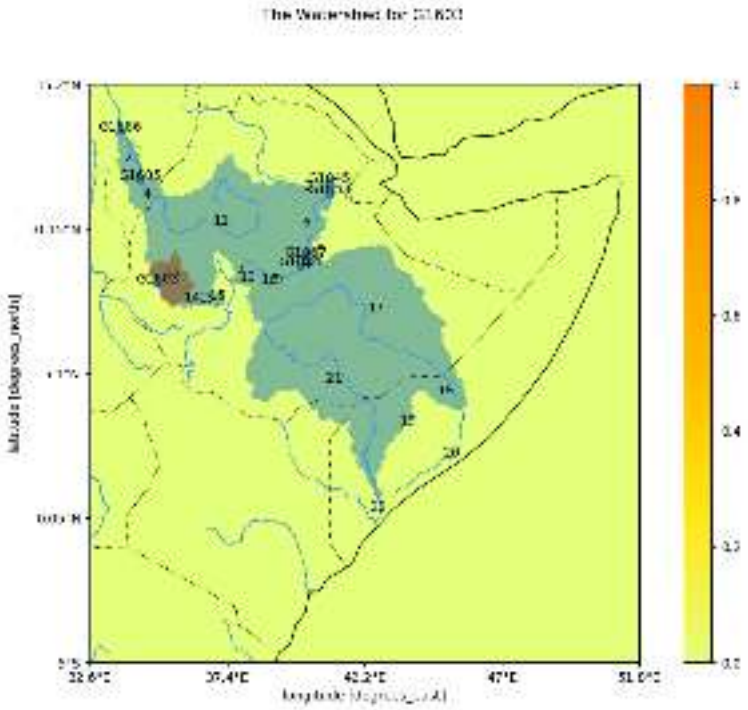


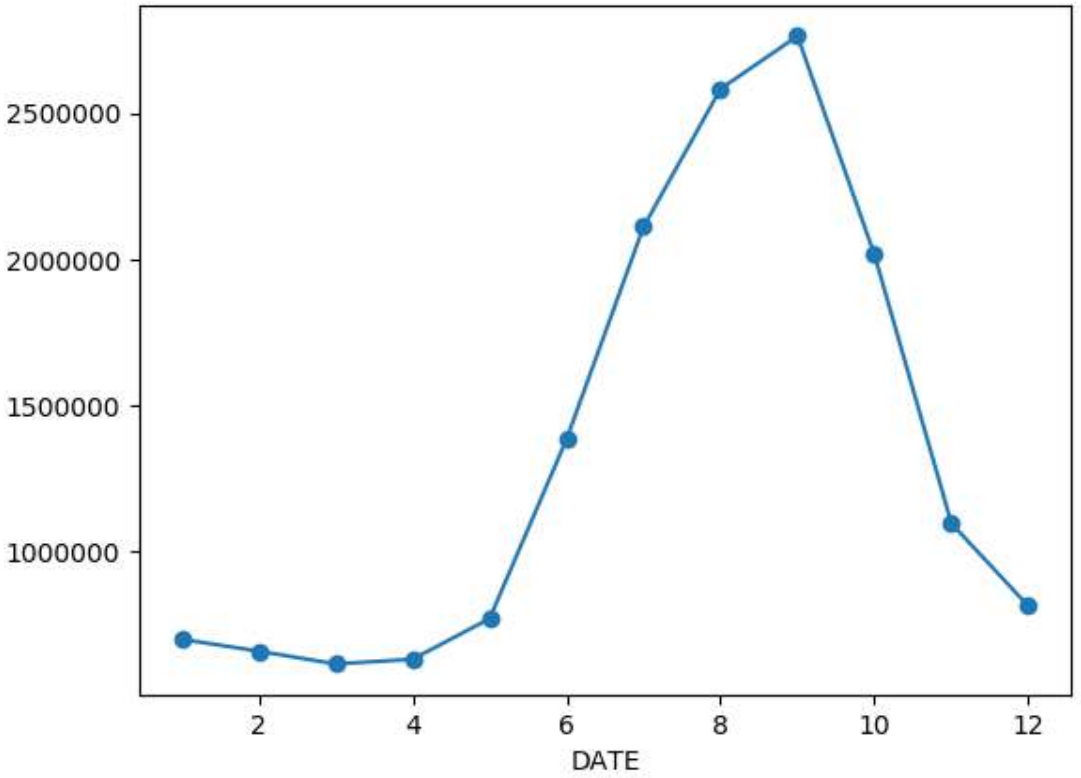

G1067 Station Seasonality [mm day-1]
280000
260000
240000
220000
200000
180000
160000
140000
120000
2
4
6
8
10
12
DATE
modis evapotranspiration
chirps precipitation

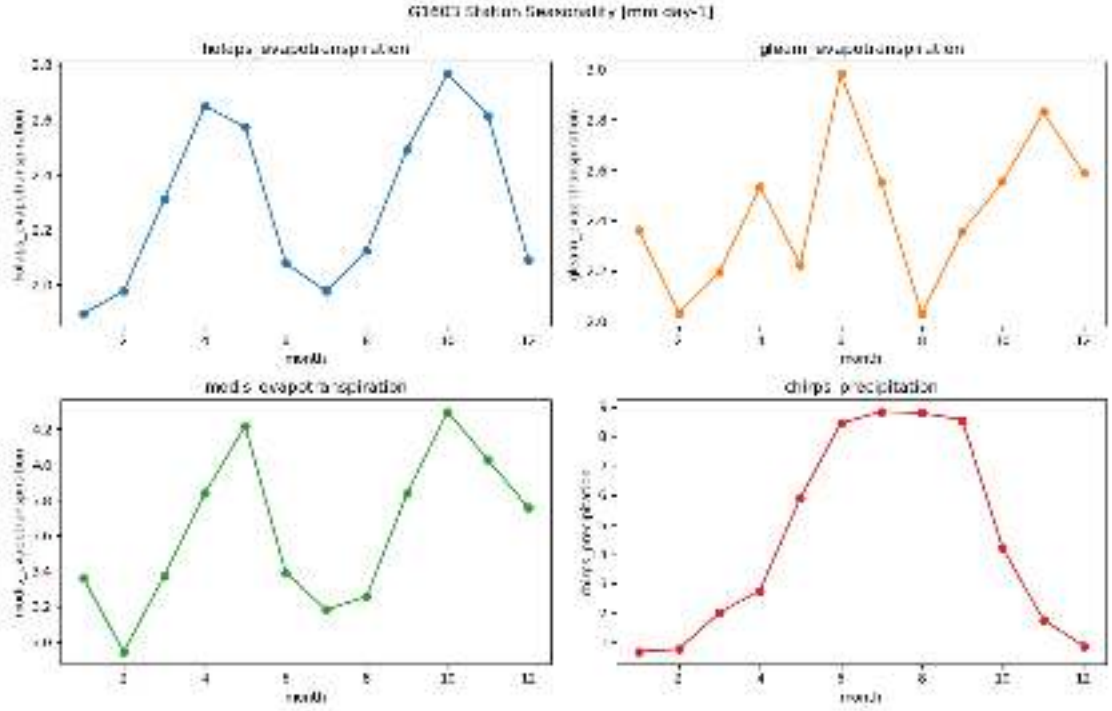


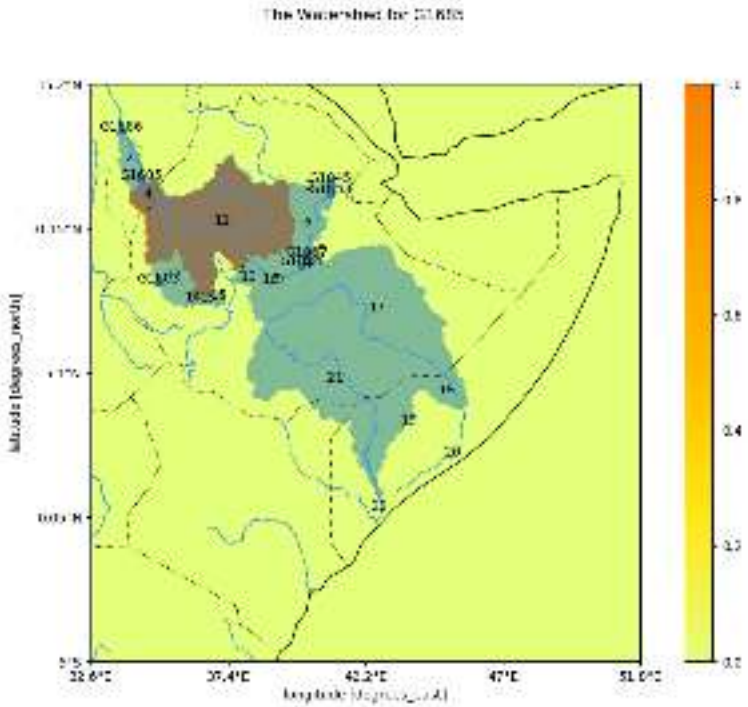

G1074 Station Seasonality [mm day-1]
220000
200000
180000
160000
140000
2
4
6
8
10
12
DATE

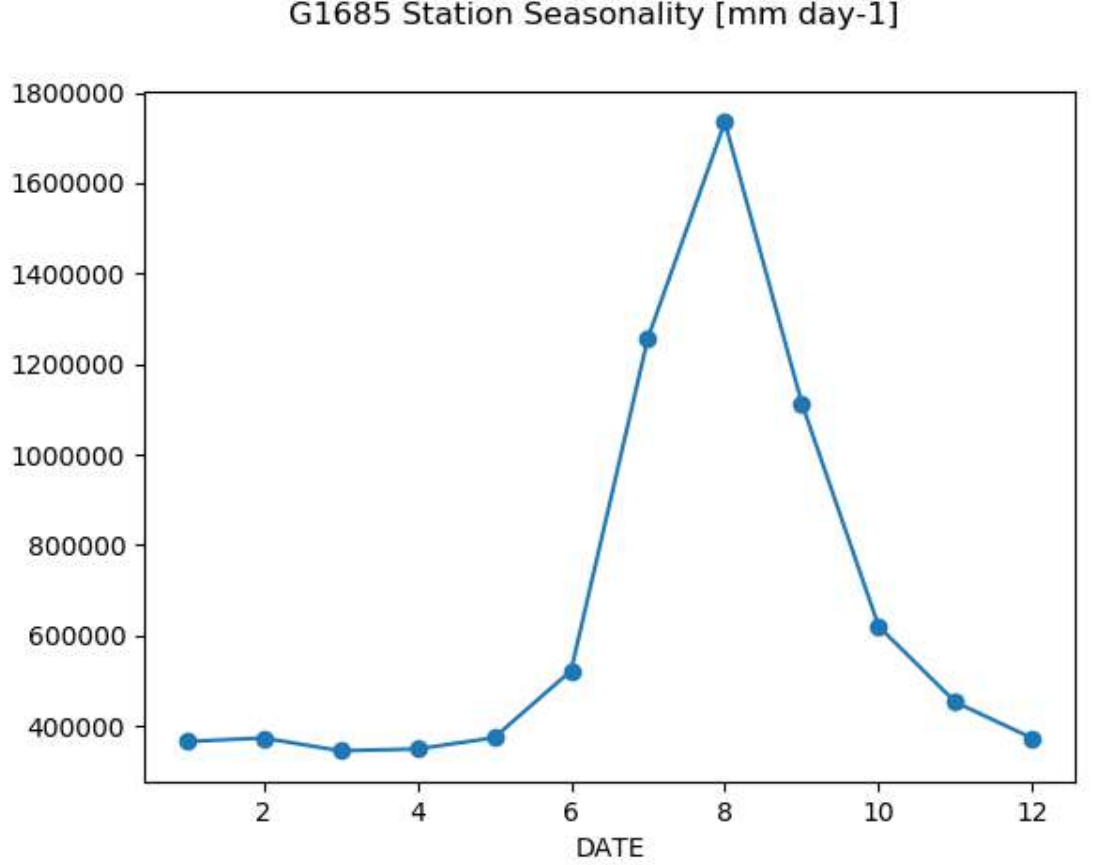

modis evapotranspiration
chirps precipitation

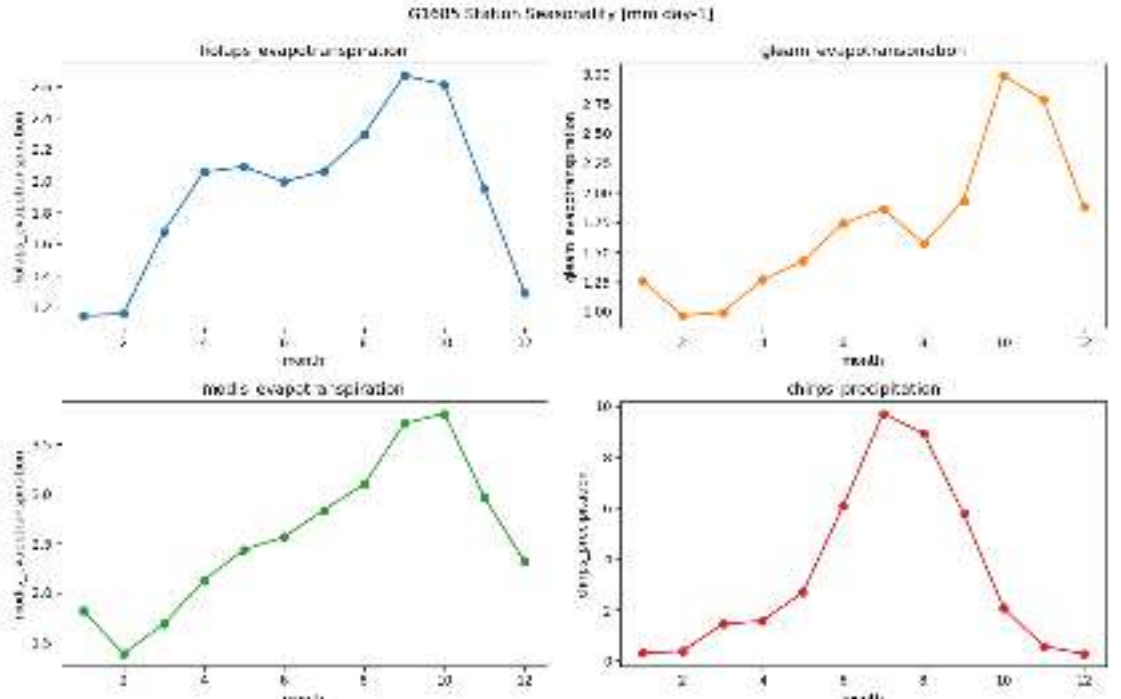


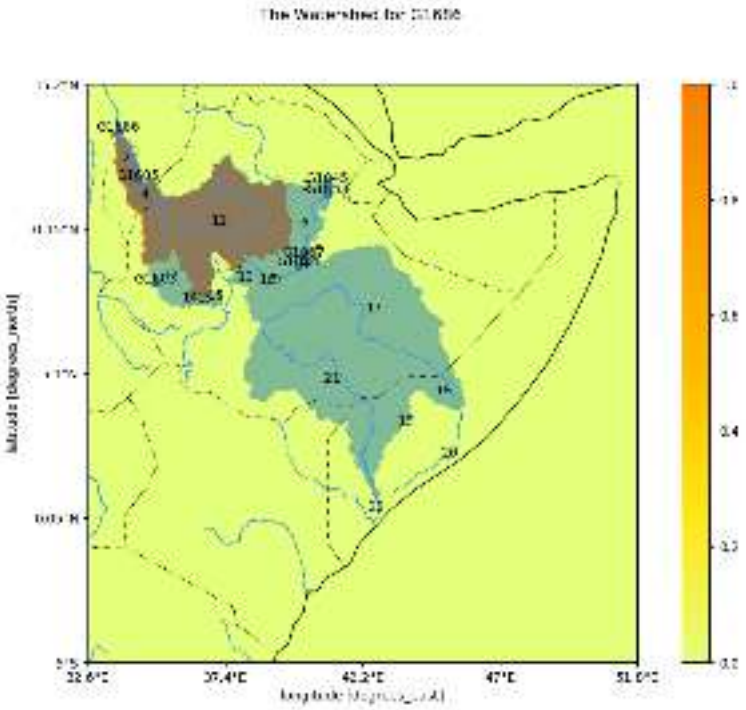

2500000
2000000
1500000
1000000
2
4
6
8
10
12
DATE

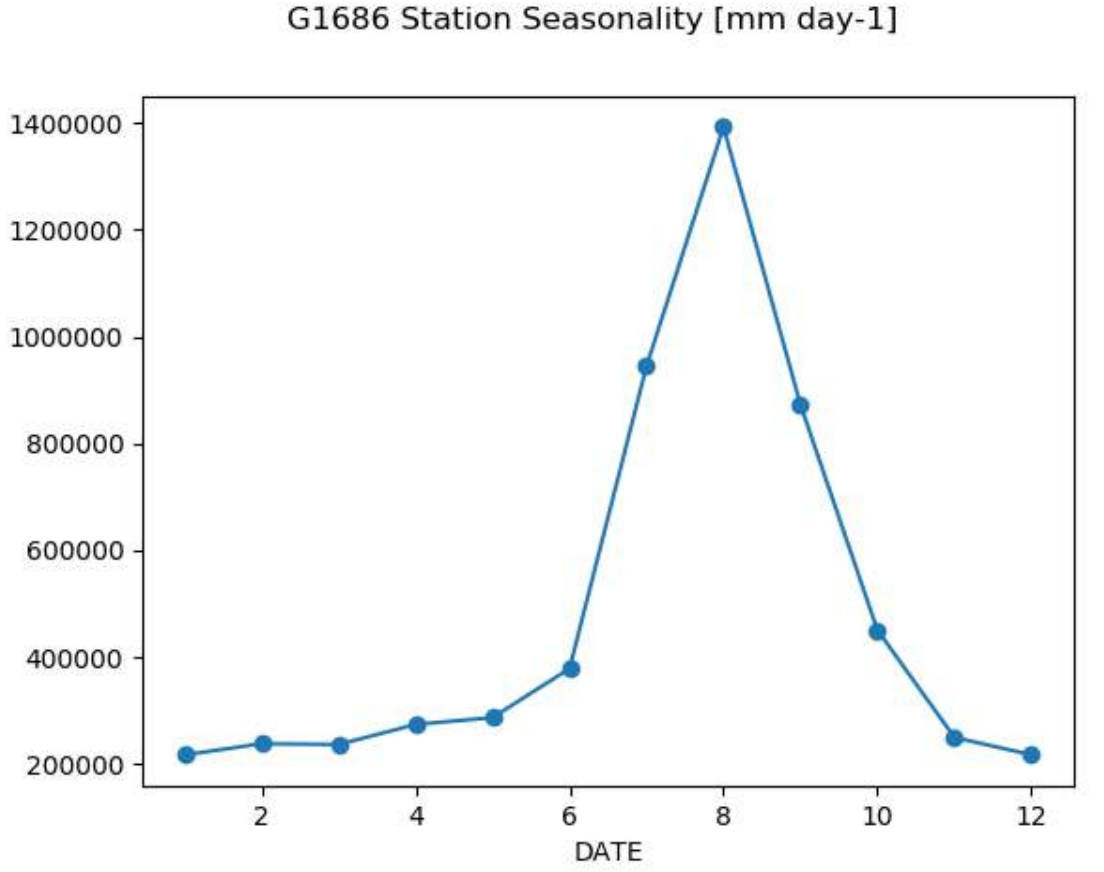

chirps precipitation

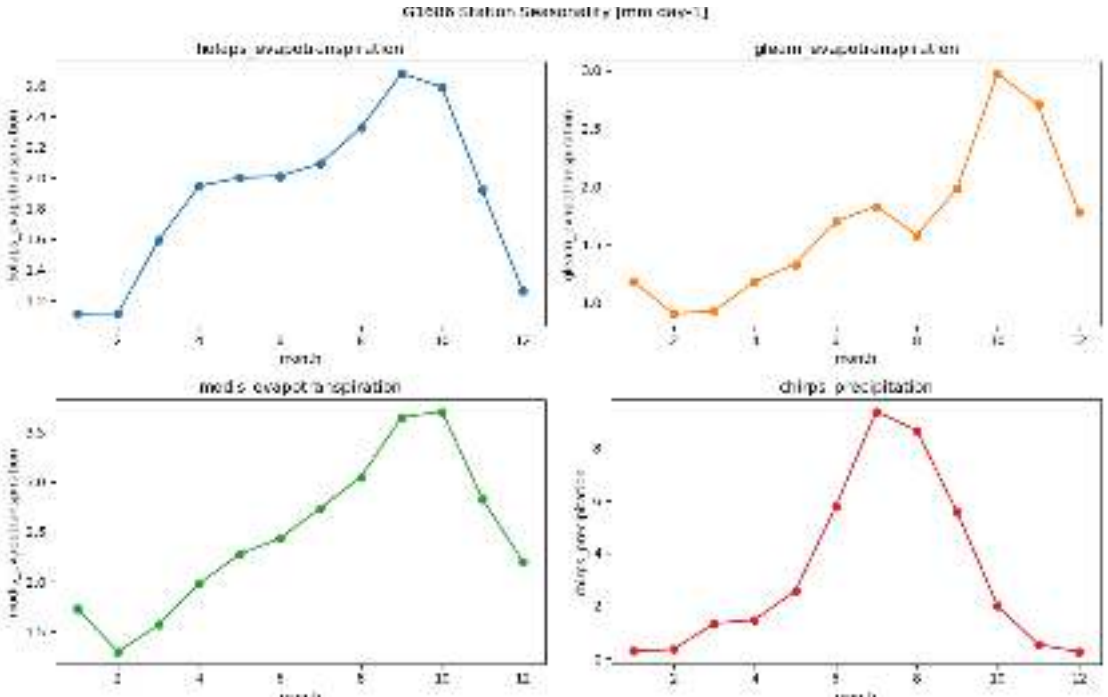


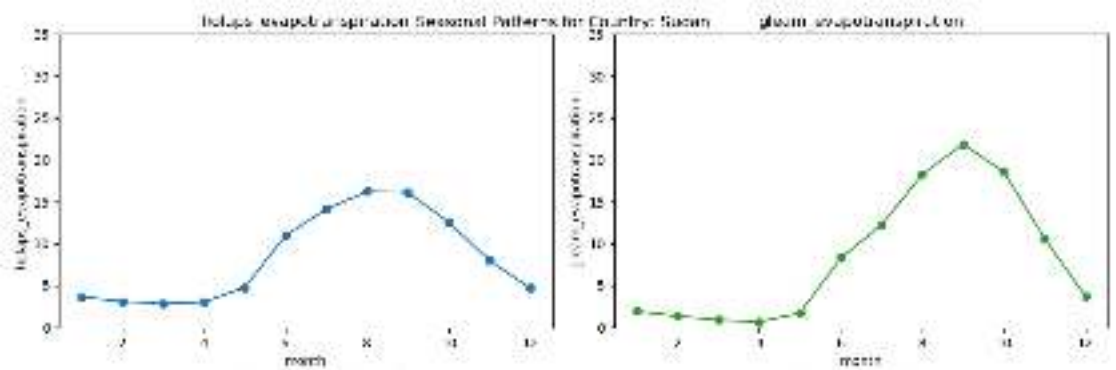

G1685 Station Seasonality [mm day-1]
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
2
4
6
8
10
12
DATE

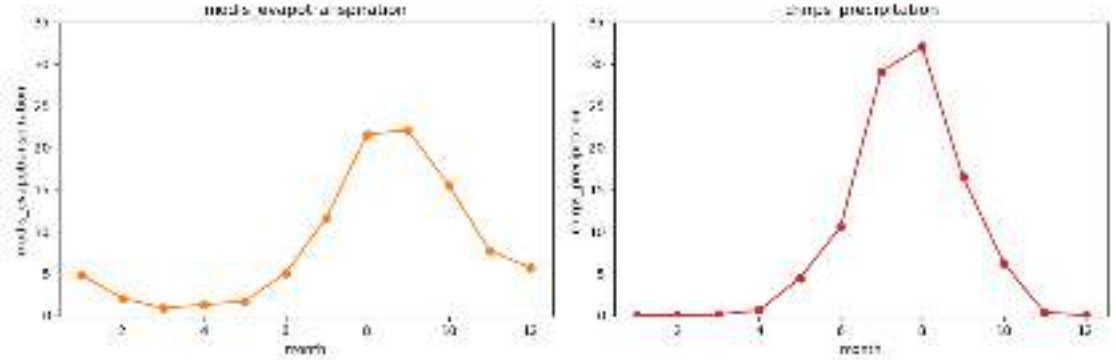


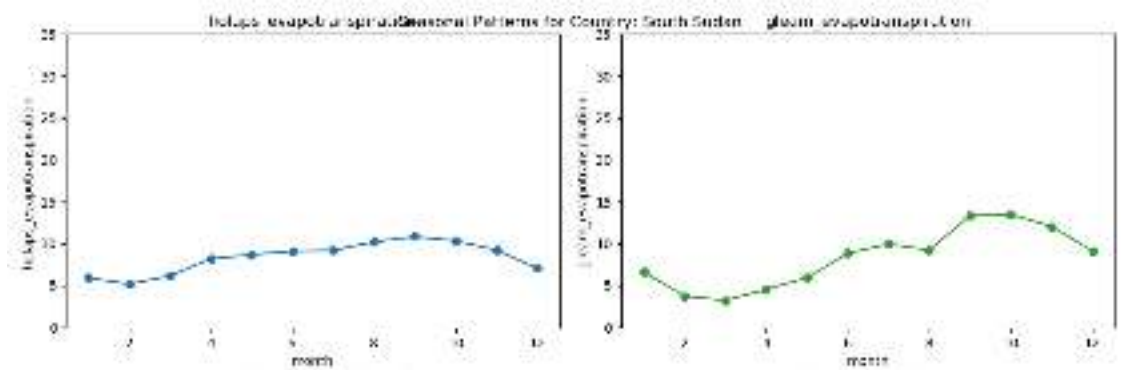


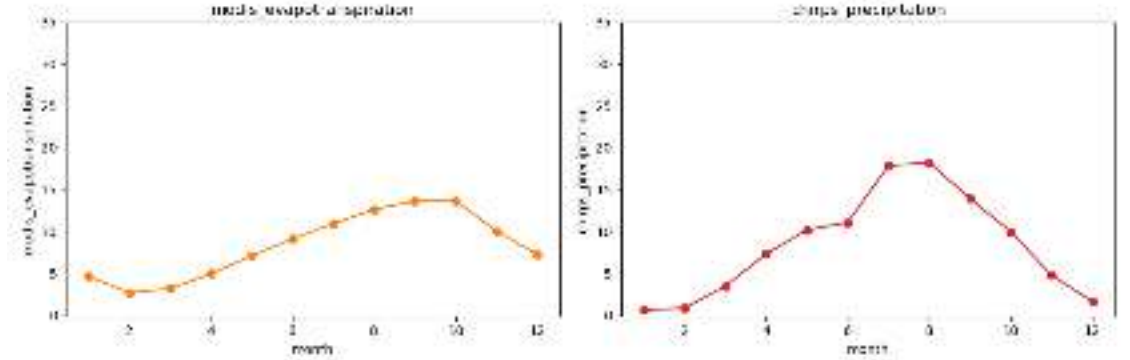

G1686 Station Seasonality [mm day-1]
1400000
1200000
1000000
800000
600000
400000
200000
2
4
6
8
10
12
DATE

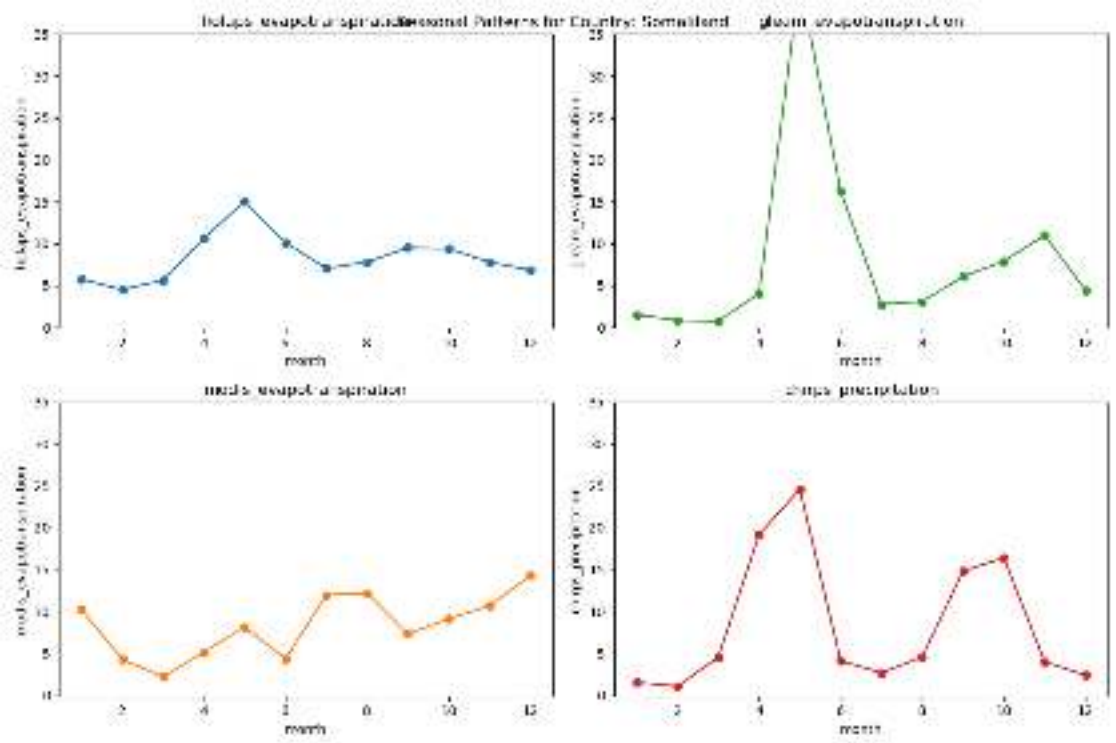

month
month
month
month

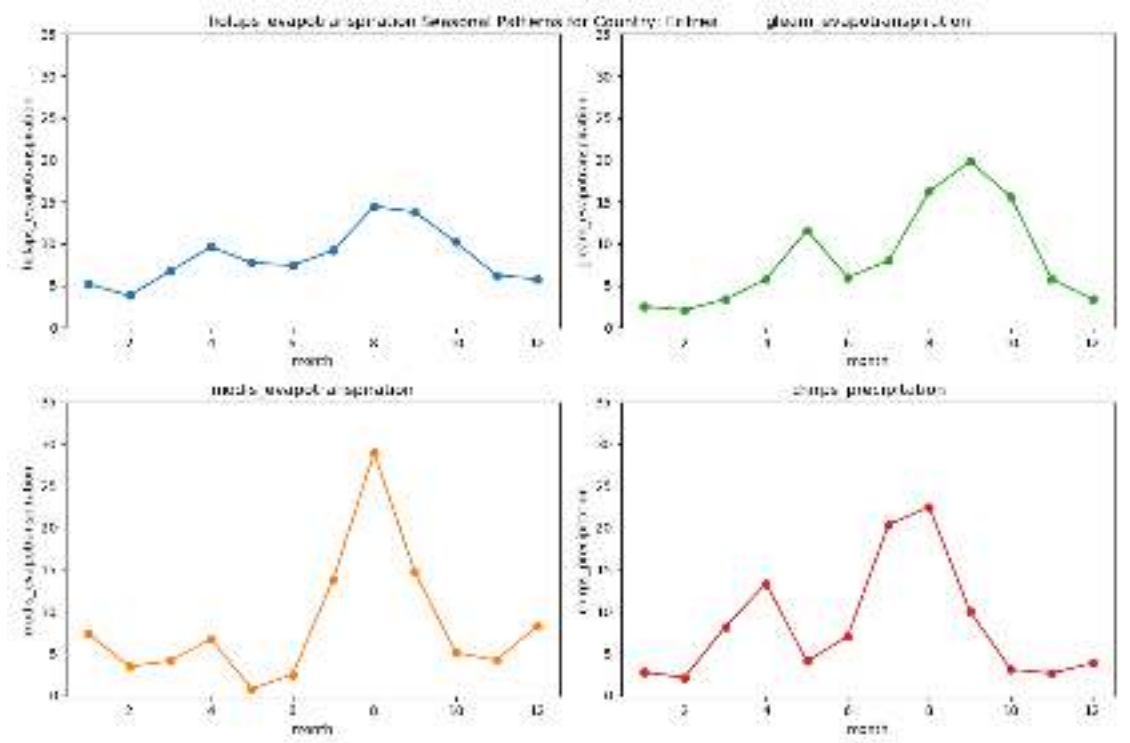

Tulips evapotranspiration Seasonal Patterns for Country: Sudan
gleam.evapotranspiration
month

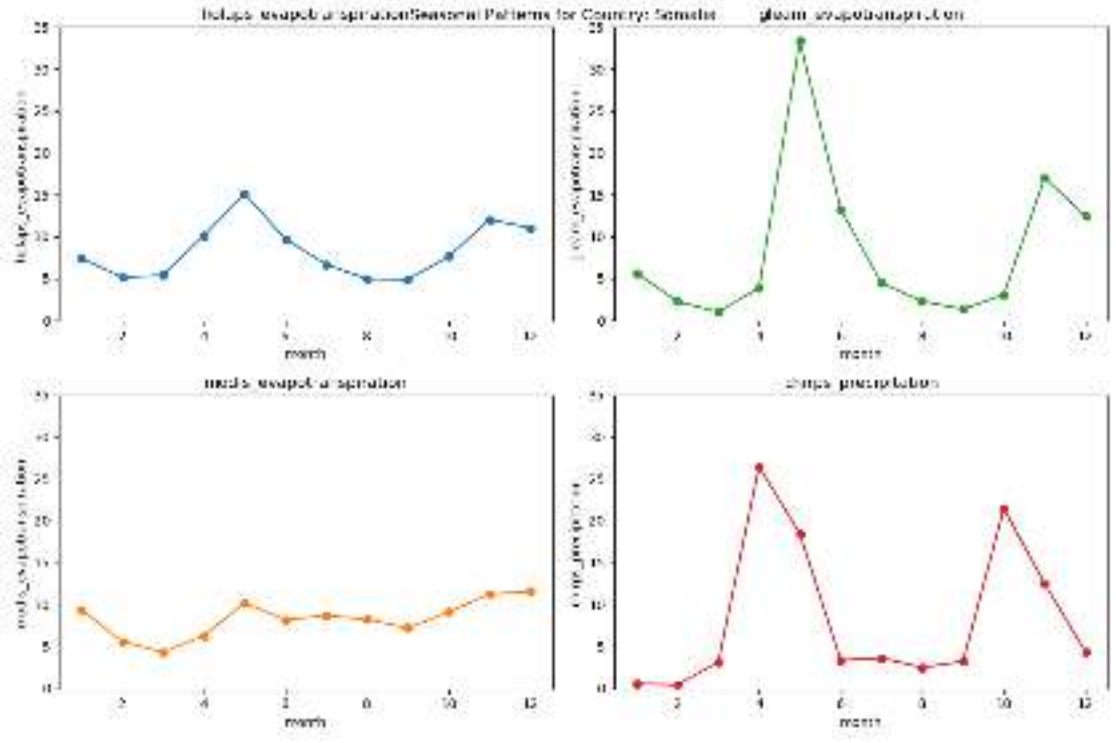

month

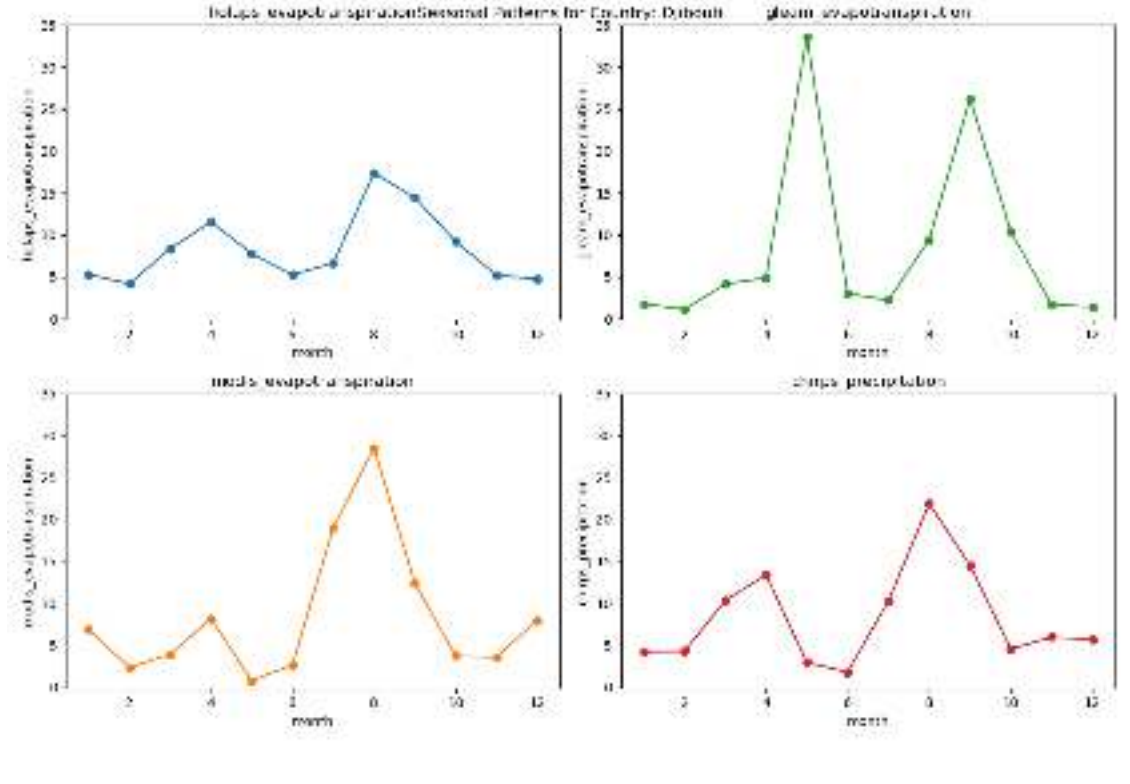

Tulips evapotranspiration Seasonal Patterns for Country: South Sudan
gleam.evapotranspiration
month


month


Seasonal Patterns for Country: Somaliland
month
month
month
month


Seasonal Patterns for Country: Eritrea
month
month
month
month


Seasonal Patterns for Country: Somalia
month
month
month
month


Seasonal Patterns for Country: Djibouti
month
month
month
month