compare

January 26, 2021

```python
In [1]: from netCDF4 import Dataset
        import numpy as np
        import pandas as pd
```

```python
In [2]: my_example_nc_file1 = '/home/user/Downloads/2014.nc4'
        fh1 = Dataset(my_example_nc_file1, mode='r')
        my_example_nc_file2 = '/home/user/Downloads/2015.nc4'
        fh2= Dataset(my_example_nc_file2, mode='r')
        my_example_nc_file3 = '/home/user/Downloads/2016.nc4'
        fh3= Dataset(my_example_nc_file3, mode='r')
        my_example_nc_file4 = '/home/user/Downloads/2017.nc4'
        fh4= Dataset(my_example_nc_file4, mode='r')
        my_example_nc_file4 = '/home/user/Downloads/2018.nc4'
        fh5 = Dataset(my_example_nc_file4, mode='r')
```

```python
In [3]: for i in fh.variables:
            print(i )
```

```
        ---------------------------------------------------------------------------

        NameError                                 Traceback (most recent call last)

        <ipython-input-3-1c2943d66e78> in <module>
    ----> 1 for i in fh.variables:
          2     print(i )


        NameError: name 'fh' is not defined
```

```python
In [4]: lons1 = fh1.variables['lon'][:]
        lats1 = fh1.variables['lat'][:]
        eva1 = fh1.variables['Evap_tavg'][:]
        precip1 = fh1.variables['Rainf_f_tavg'][:]
        soil1 = fh1.variables['SoilMoi0_10cm_inst'][:]

        lons2 = fh2.variables['lon'][:]
```

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        lats2 = fh2.variables['lat'][:]
        eva2= fh2.variables['Evap_tavg'][:]
        precip2 = fh2.variables['Rainf_f_tavg'][:]
        soil2 = fh2.variables['SoilMoi0_10cm_inst'][:]

        lons3 = fh3.variables['lon'][:]
        lats3 = fh3.variables['lat'][:]
        eva3 = fh3.variables['Evap_tavg'][:]
        precip3 = fh3.variables['Rainf_f_tavg'][:]
        soil3 = fh3.variables['SoilMoi0_10cm_inst'][:]

        lons4 = fh4.variables['lon'][:]
        lats4 = fh4.variables['lat'][:]
        eva4 = fh4.variables['Evap_tavg'][:]
        precip4 = fh4.variables['Rainf_f_tavg'][:]
        soil4 = fh4.variables['SoilMoi0_10cm_inst'][:]

        lons5 = fh5.variables['lon'][:]
        lats5 = fh5.variables['lat'][:]
        eva5 = fh5.variables['Evap_tavg'][:]
        precip5 = fh5.variables['Rainf_f_tavg'][:]
        soil5 = fh5.variables['SoilMoi0_10cm_inst'][:]

In [5]: info_eva1 = pd.DataFrame(fh1.variables["Evap_tavg"][0][:][:])
        #print(info_eva)
        info_eva2 = pd.DataFrame(fh2.variables["Evap_tavg"][0][:][:])
        #print(info_eva)
        info_eva3 = pd.DataFrame(fh3.variables["Evap_tavg"][0][:][:])
        #print(info_eva)
        info_eva4 = pd.DataFrame(fh4.variables["Evap_tavg"][0][:][:])
        #print(info_eva)
        info_eva5 = pd.DataFrame(fh5.variables["Evap_tavg"][0][:][:])

In [6]: info_precip1 = pd.DataFrame(fh1.variables["Rainf_f_tavg"][0][:][:])
        #print(info_eva)
        info_precip2= pd.DataFrame(fh2.variables["Rainf_f_tavg"][0][:][:])
        #print(info_eva)
        info_precip3 = pd.DataFrame(fh3.variables["Rainf_f_tavg"][0][:][:])
        #print(info_eva)
        info_precip4 = pd.DataFrame(fh4.variables["Rainf_f_tavg"][0][:][:])
        #print(info_eva)
        info_precip5 = pd.DataFrame(fh5.variables["Rainf_f_tavg"][0][:][:])

In [7]: #info_eva2 = info_eva.loc[: , 0]
        #print(info_eva2.shape)
        import matplotlib.pyplot as plt
        plt.plot(lats1, info_eva1.loc[: , 0] , label = "20014-2015")
        plt.plot(lats2, info_eva2.loc[: , 0] , label = "2015-2016")
```

```python
        plt.plot(lats3, info_eva3.loc[: , 0] , label = "2016-2017")
        plt.plot(lats4, info_eva4.loc[: , 0] , label = "2017-2018")
        plt.plot(lats5, info_eva5.loc[: , 0] , label = "2018-2019")

        #plt.plot(lats, info_eva.loc[: , :] )

        plt.xlabel('latitude')
        plt.ylabel('Evatranspiration')
        # giving a title to my graph
        plt.title('Eva vs latitude')

        # show a legend on the plot
        plt.legend()

        # function to show the plot
        plt.show()

<Figure size 640x480 with 1 Axes>


In [20]: #info_eva2 = info_eva.loc[: , 0]
        #print(info_eva2.shape)
        import matplotlib.pyplot as plt
        plt.plot(lats1, info_precip1.loc[: , 96] , label = "20014-2015")
        plt.plot(lats2, info_precip2.loc[: , 96] , label = "2015-2016")
        plt.plot(lats3, info_precip3.loc[: , 96] , label = "2016-2017")
        plt.plot(lats4, info_precip4.loc[: , 96] , label = "2017-2018")
        plt.plot(lats5, info_precip5.loc[: , 96] , label = "2018-2019")

        #plt.plot(lats, info_eva.loc[: , :] )

        plt.xlabel('latitude')
        plt.ylabel('Precipitation')
        # giving a title to my graph
        plt.title('Precipitation vs latitude')

        # show a legend on the plot
        plt.legend()

        # function to show the plot
        plt.show()
```
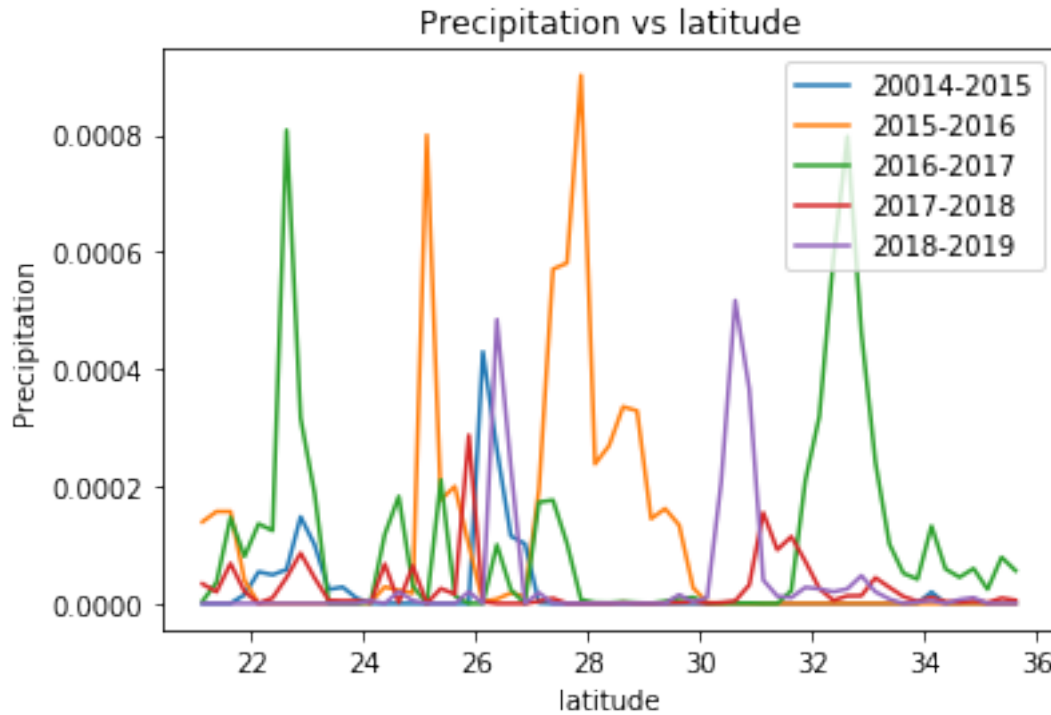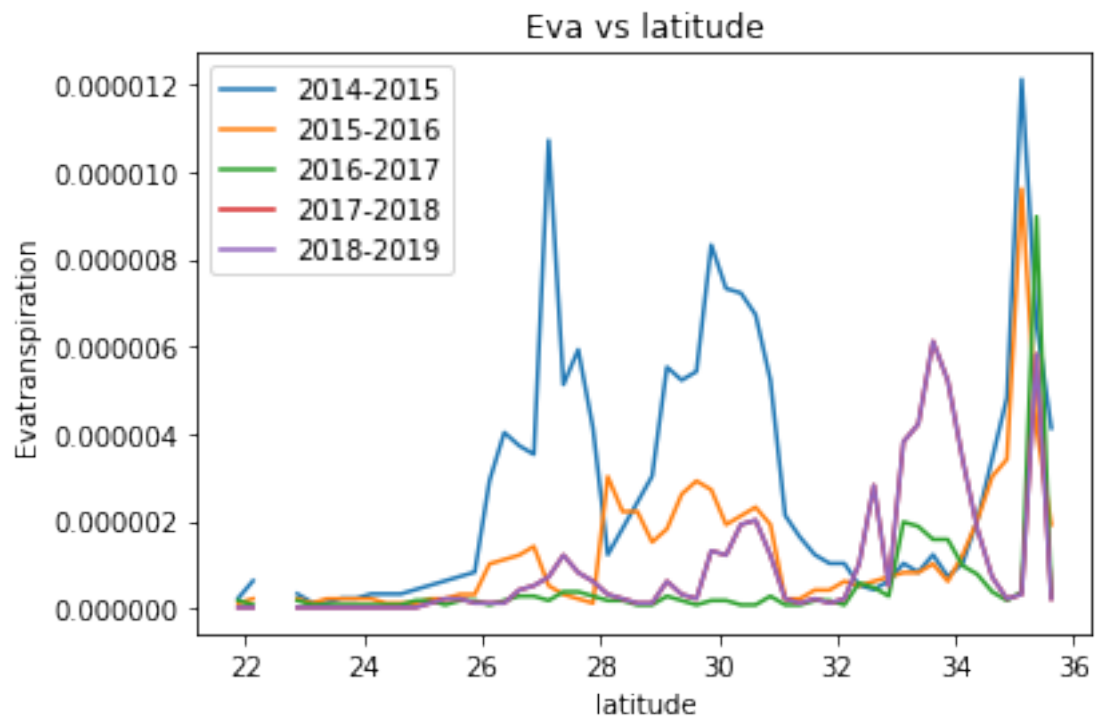
Precipitation vs latitude


```
In [8]: import matplotlib.pyplot as plt
        plt.plot(lats1, info_eva1.loc[: , 5] , label = "2014-2015")
        plt.plot(lats2, info_eva2.loc[: , 5] , label = "2015-2016")
        plt.plot(lats3, info_eva3.loc[: , 5] , label = "2016-2017")
        plt.plot(lats4, info_eva4.loc[: , 5] , label = "2017-2018")
        plt.plot(lats4, info_eva4.loc[: , 5] , label = "2018-2019")
        #plt.plot(lats, info_eva.loc[: , :] )

        plt.xlabel('latitude')
        plt.ylabel('Evatranspiration')
        # giving a title to my graph
        plt.title('Eva vs latitude')

        # show a legend on the plot
        plt.legend()

        # function to show the plot
        plt.show()
```

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Eva vs latitude

In [ ]:

In [ ]:

In [ ]: