

Homework 5

Weather Prediction

due Tuesday Mar 8, 2022 @ 8pm

In this assignment we will create a database to analyze historical weather data and discovery the relationships between major cities.

- 1) Use the data supplied of airport codes (ICAO_airports.csv) and top airports (op_airports.csv) to make a table of 50 most travelled airports in the US and containing relevant information, like name, wikipedia link, latitude, longitude
- 2) Build another table that will hold historical weather information: min/max temperature, relative humidity, and precipitation

- 3) using the data from the `xarray/netCDF4` example in class, populate the database from 1990-2000
- 4) For each pair of cities/airports determine how the daily change of temperature high and precipitation from one city predicts the daily change of the other city 1, 3, & 7 days in advance
- 5) Plot the correlation strengths for the 10 top pairs for all three dates, for temperature and precipitation (separately) as a function of distance. Also make a plot as a function of longitude different. What trends do you see?

Notes:

- for correlations between pairs, try `np.corrcoef`