

Analiza Danych Pogodowych

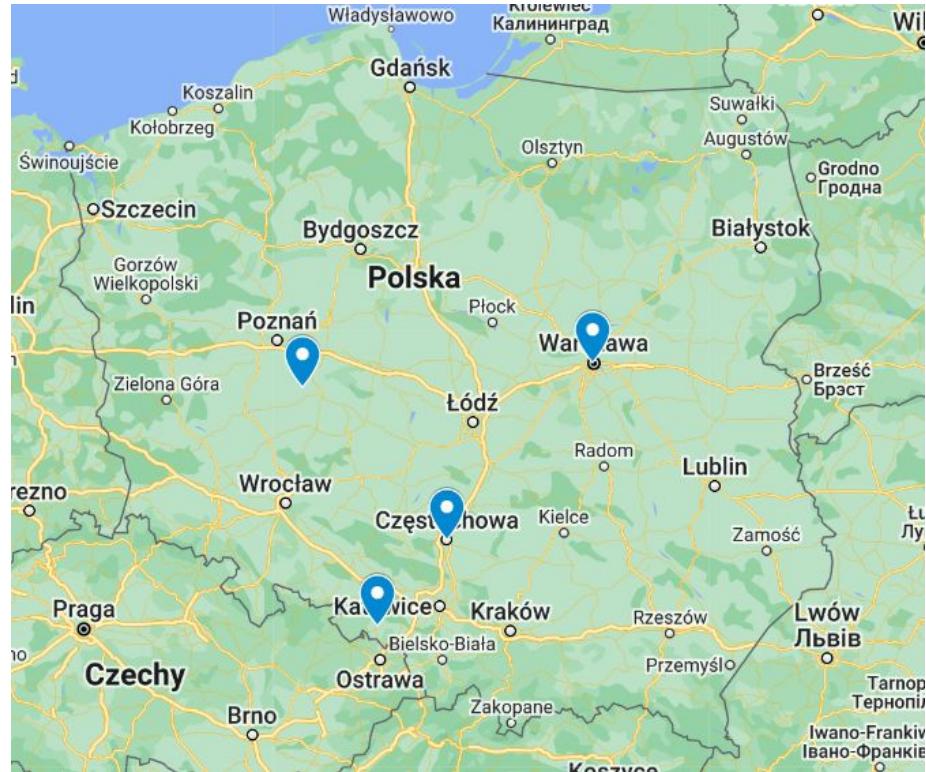
Igor Staręga
Jakub Stachyra
Dawid Sroczyk



Czy parasole będą użyteczne?

Jak zostały dobrane dane?

- Lokalizacje:
 - Warszawa
 - Częstochowa
 - Racibórz
 - Sebastianowo
- Okres
 - 01.01.1970 - 31.12.2023



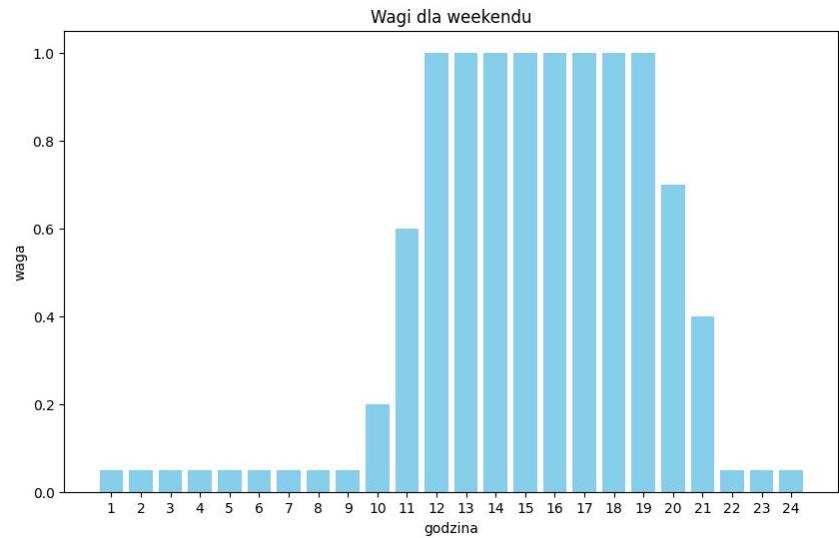
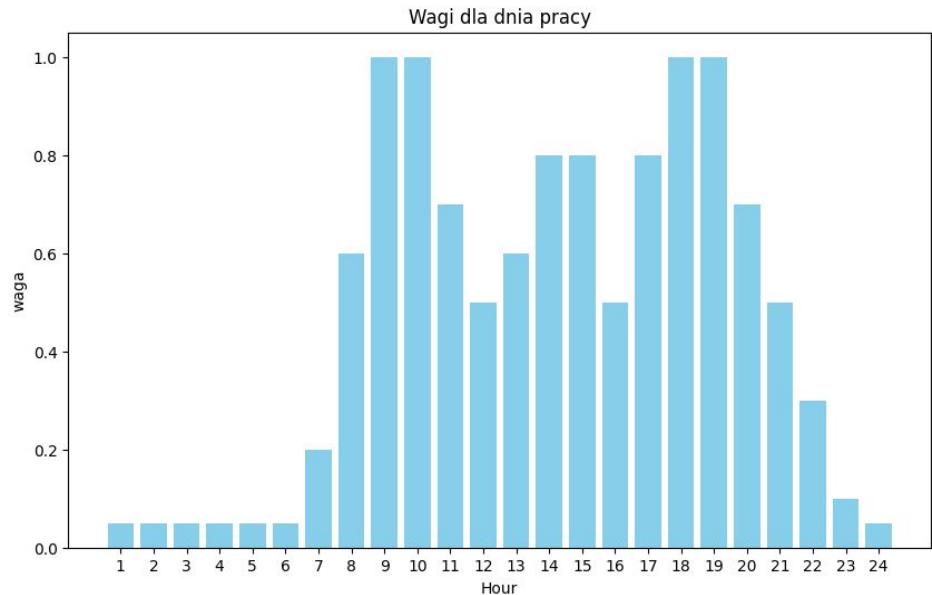


Dostosowanie danych

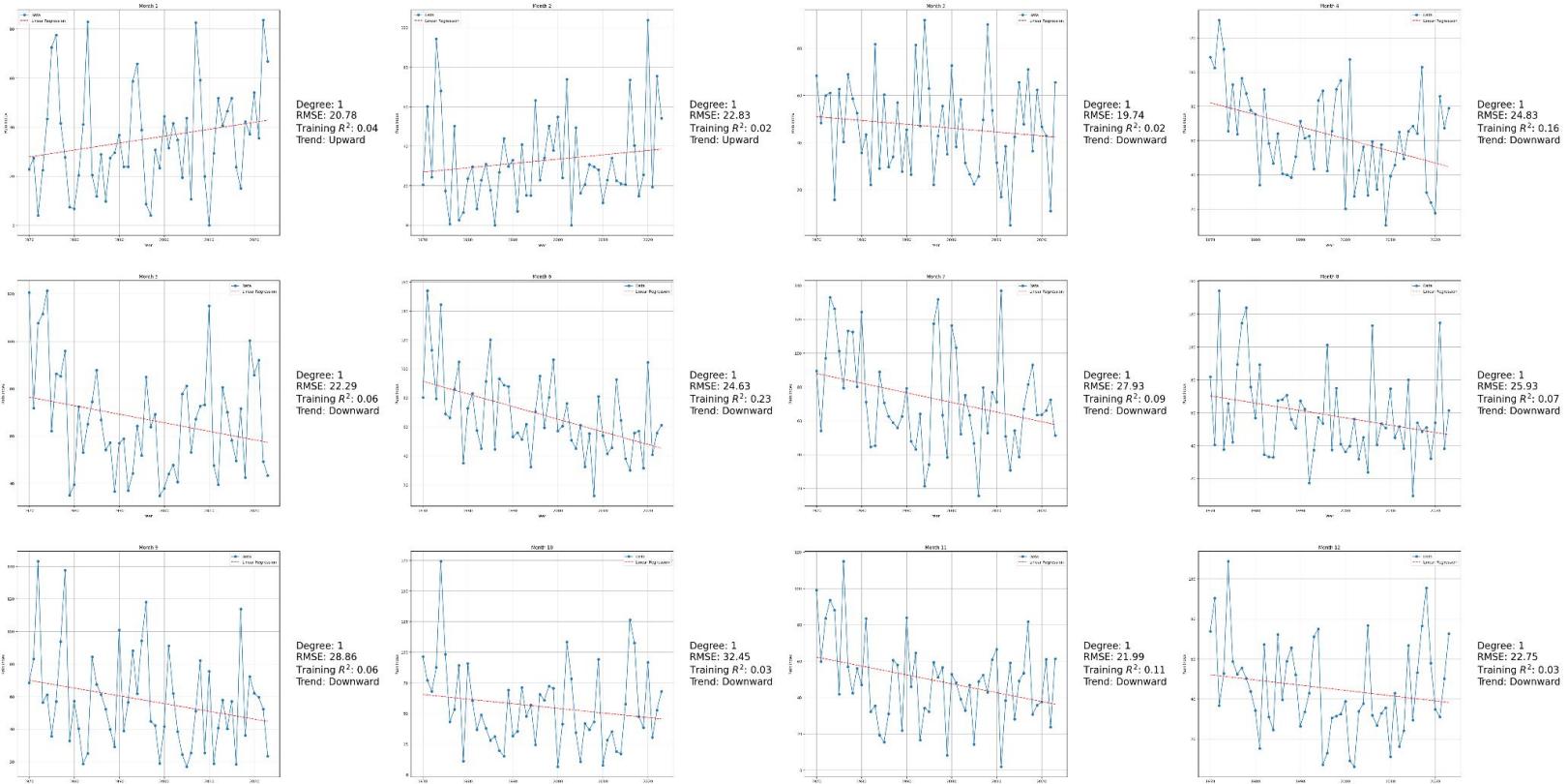
- podział na 12 miesięcy
- wyliczenie rain_index - wyznacznik “ważności” opadów
- suma rain_index - potrzebne do reprezentacji wkładu poszczególnych miesięcy w opady roczne



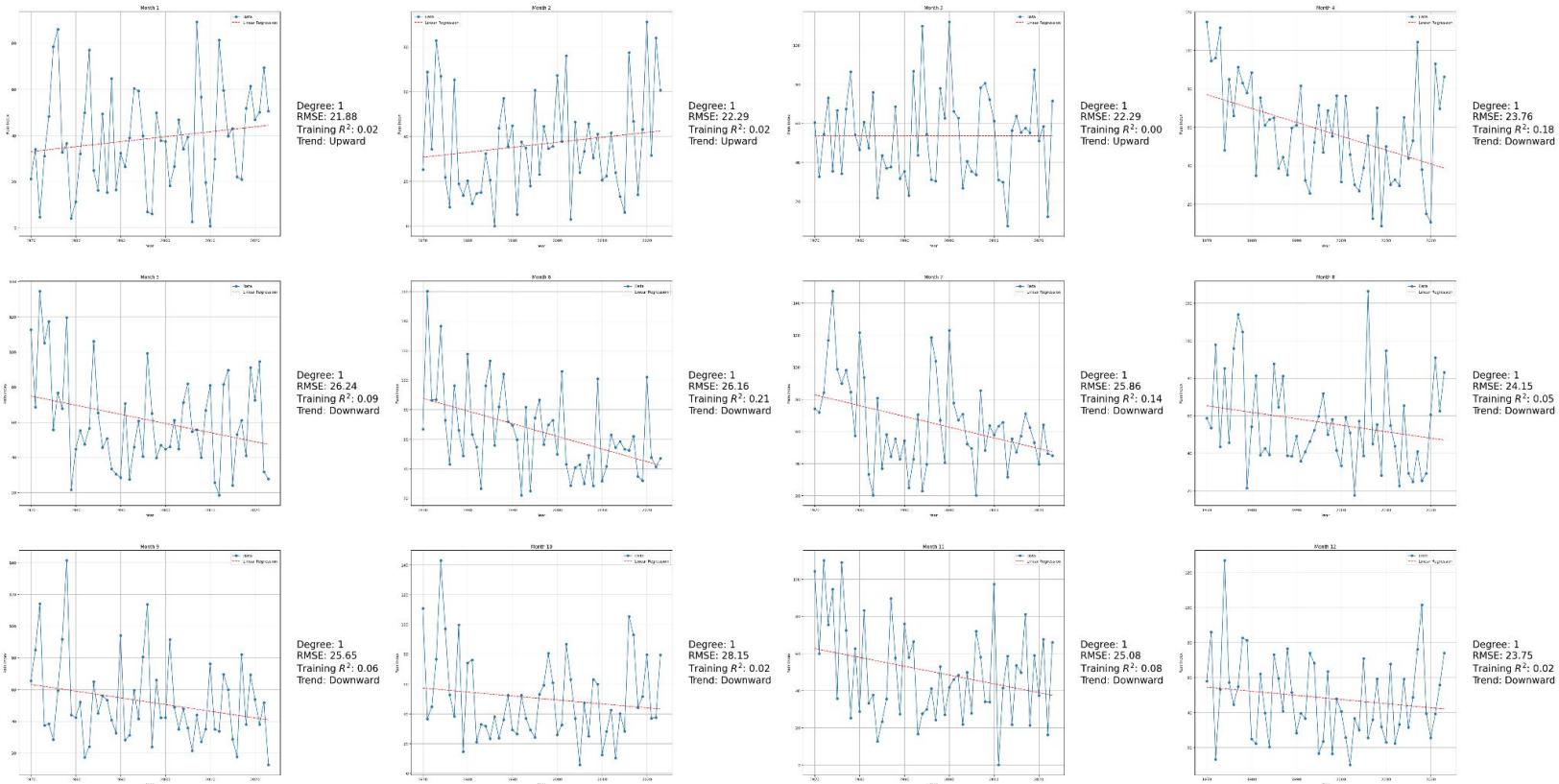
Dobieranie wag



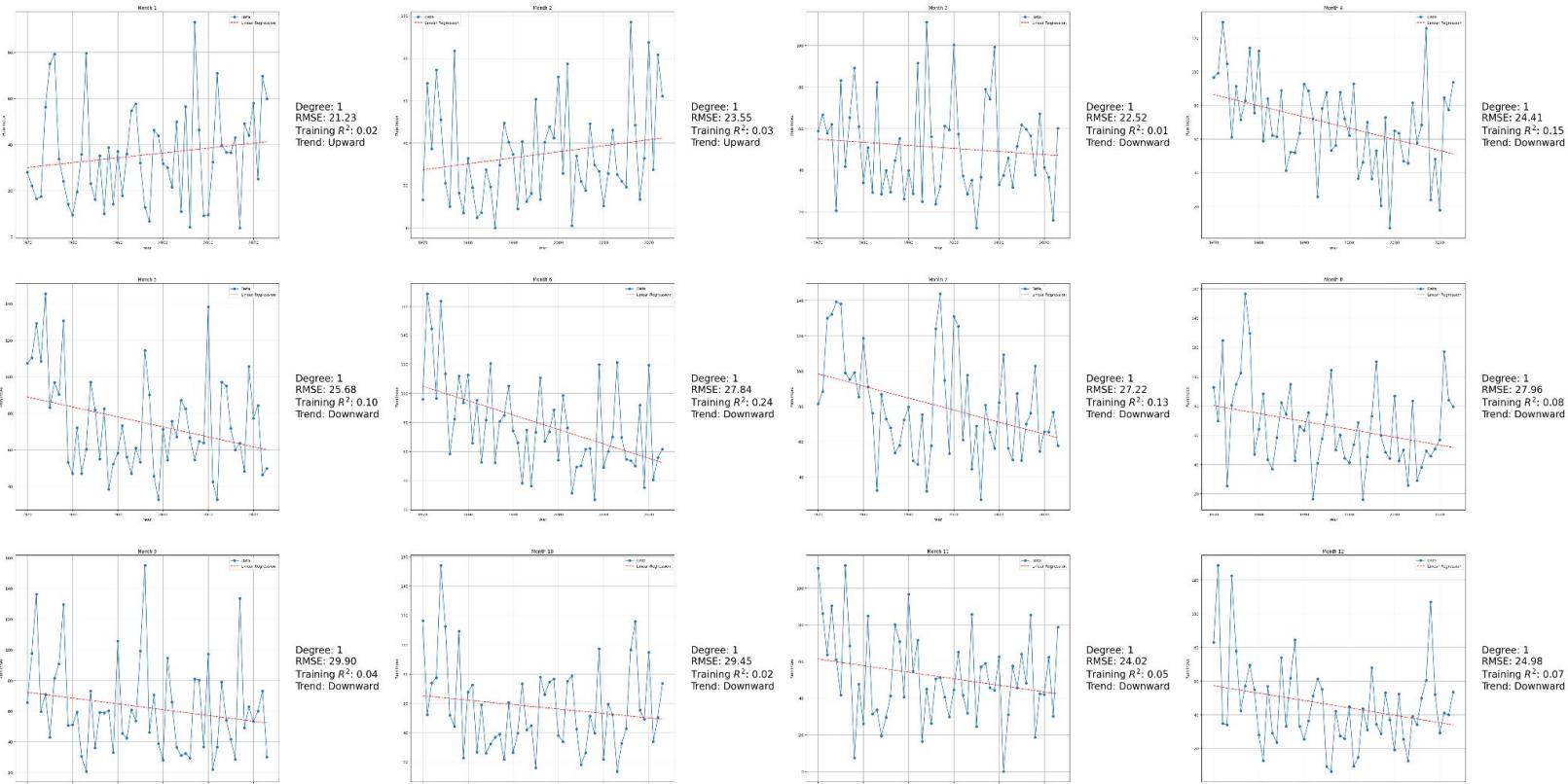
Warszawa - regresja liniowa



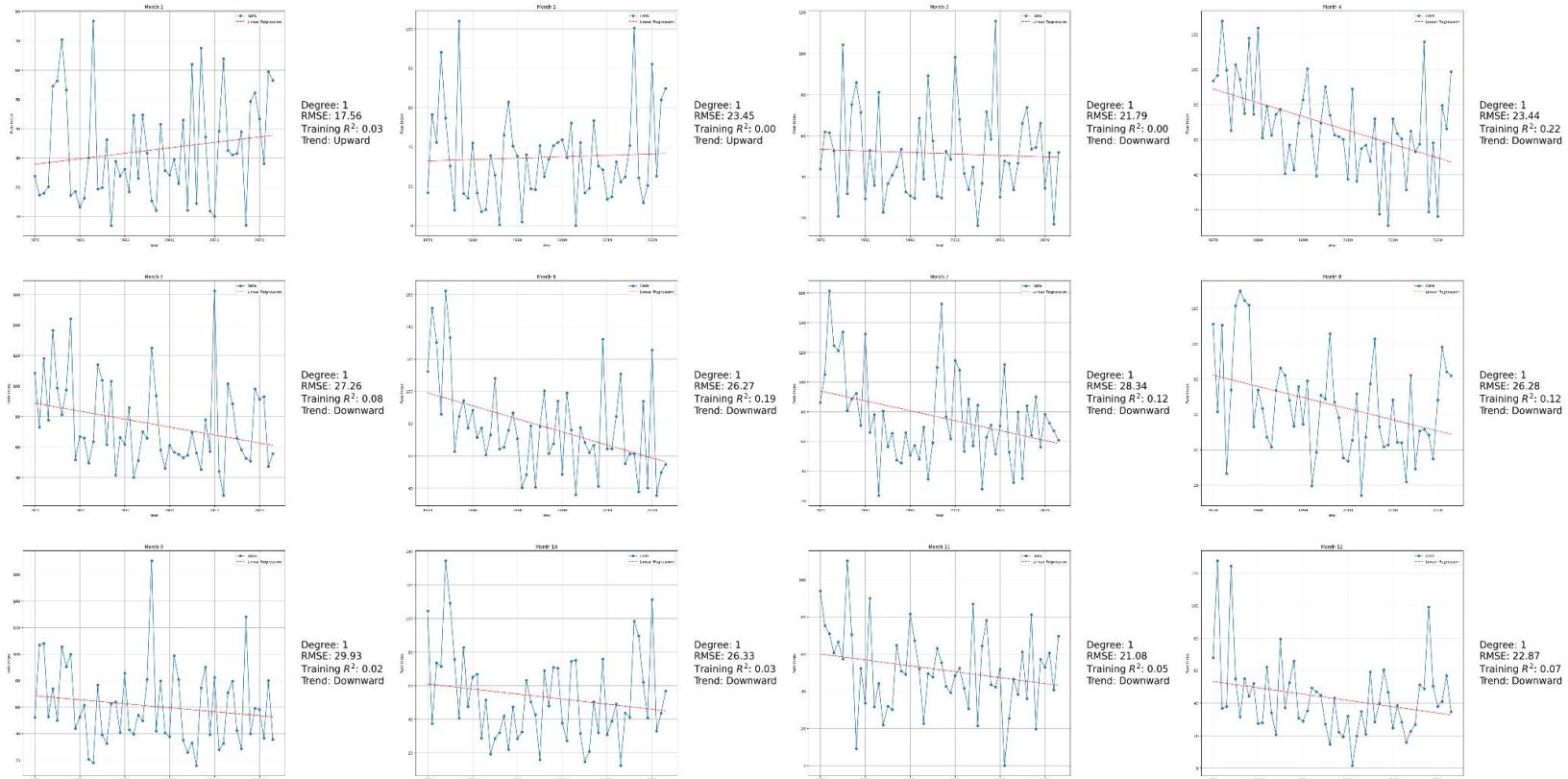
Sebastianowo - regresja liniowa



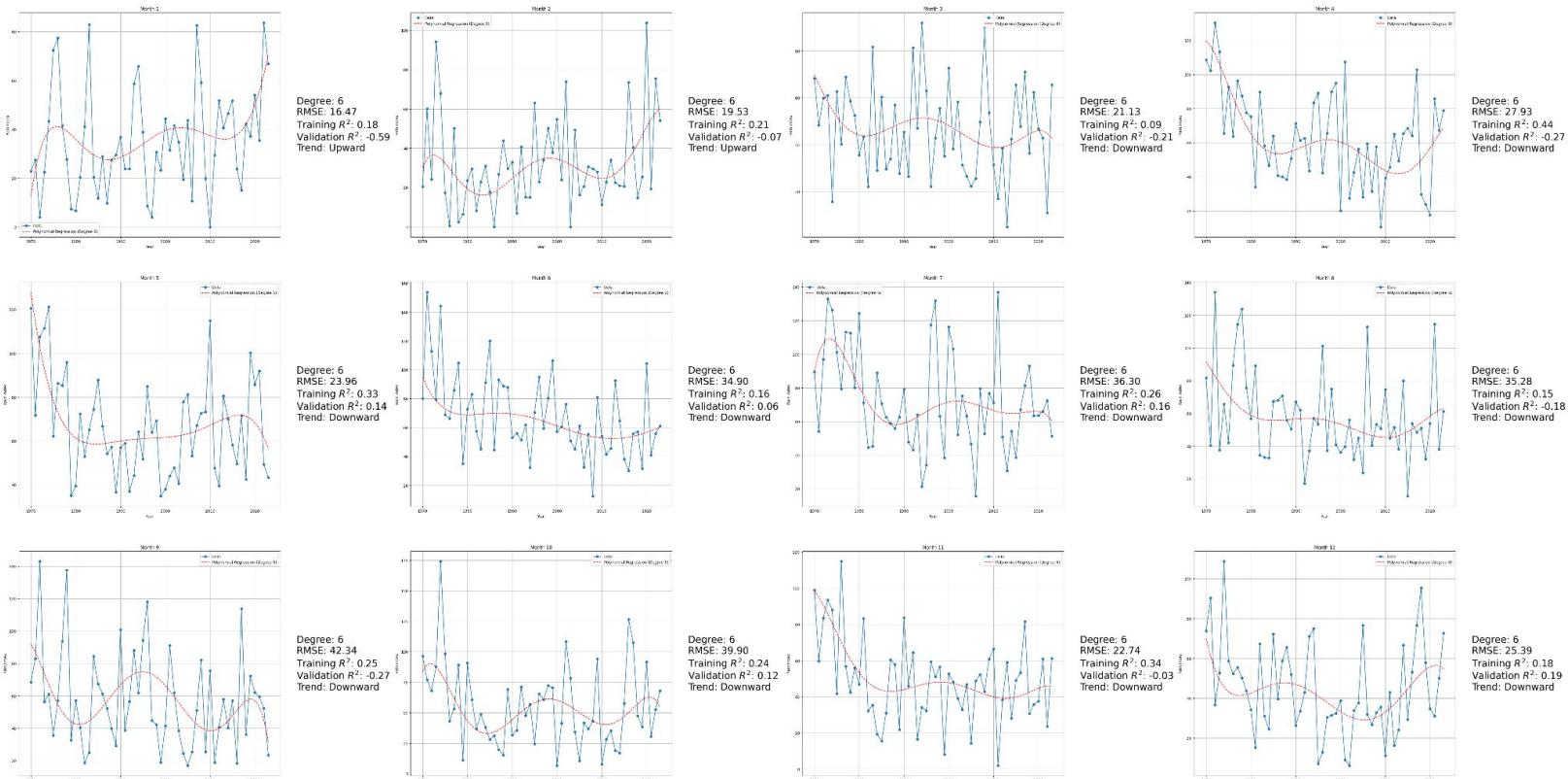
Częstochowa - regresja liniowa



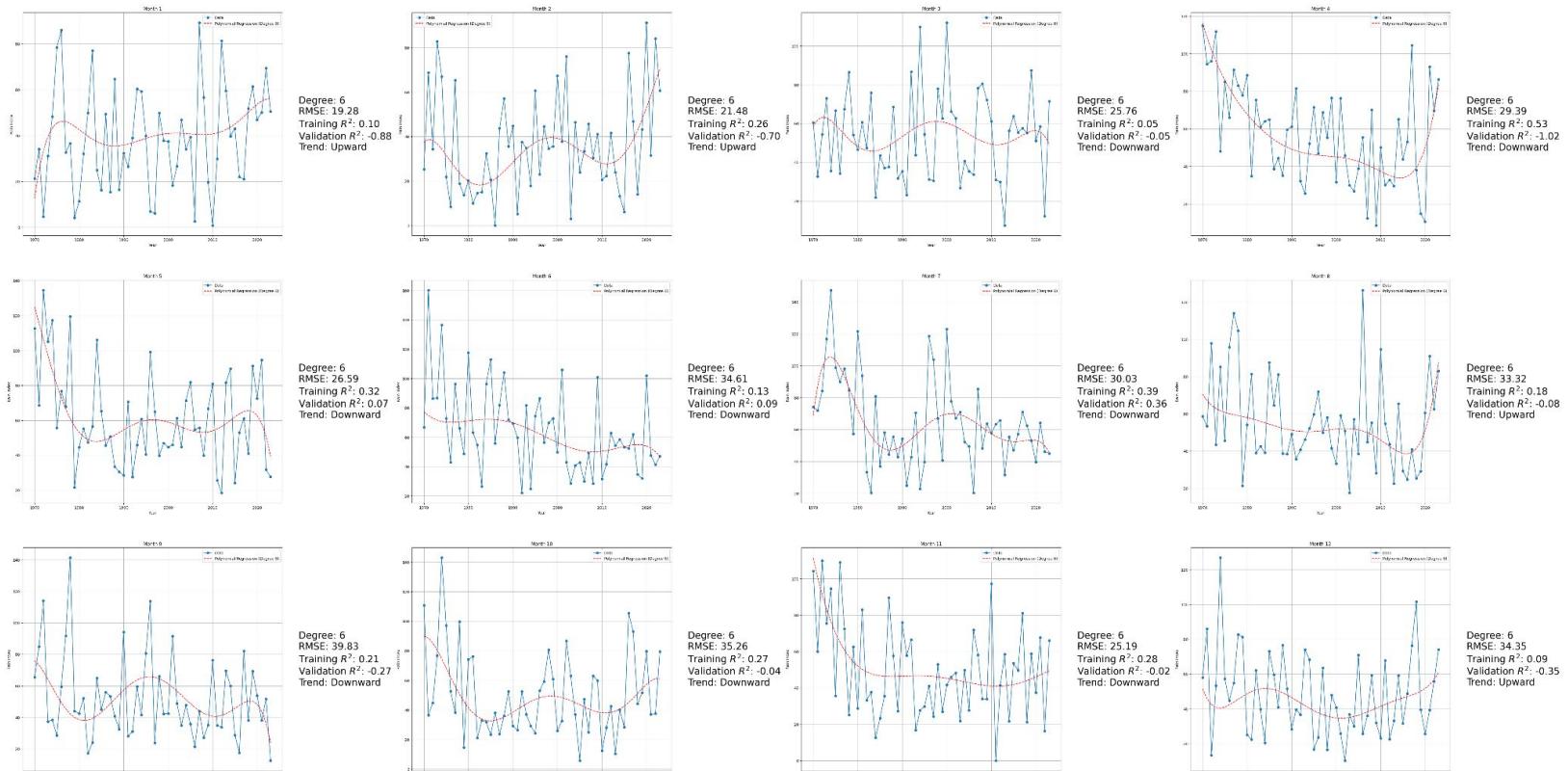
Racibórz - regresja liniowa



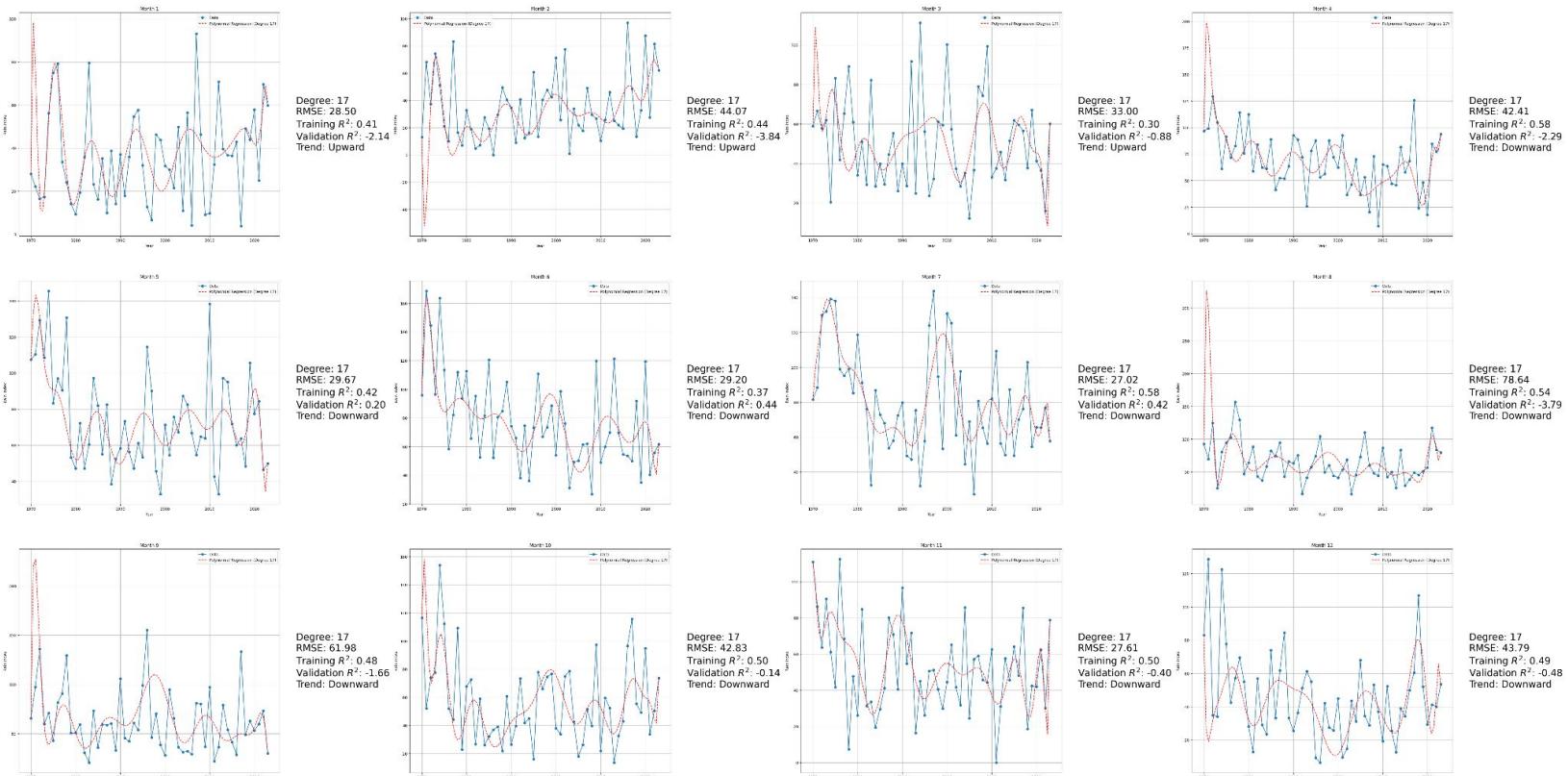
Warszawa - regresja wielomianowa



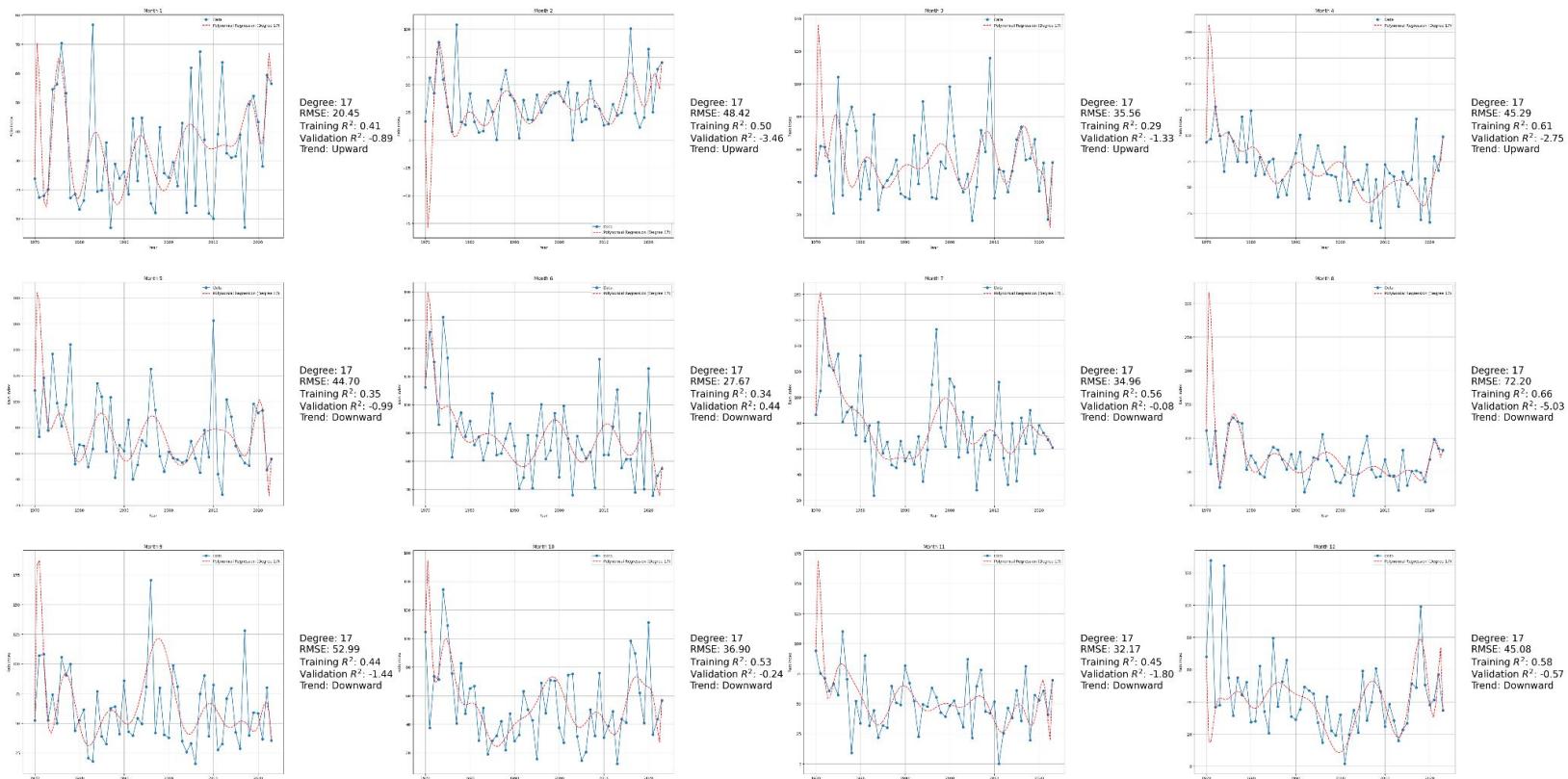
Sebastianowo - regresja wielomianowa



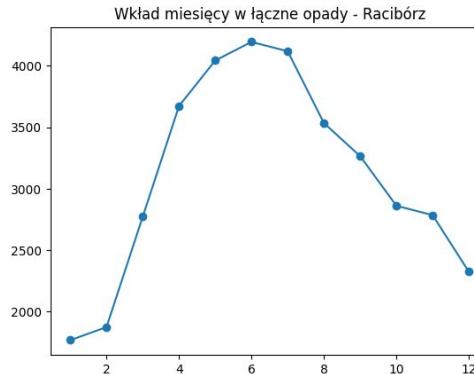
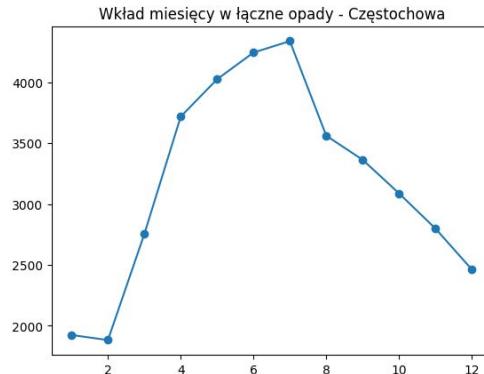
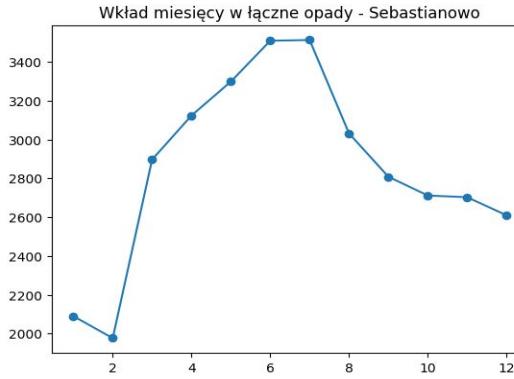
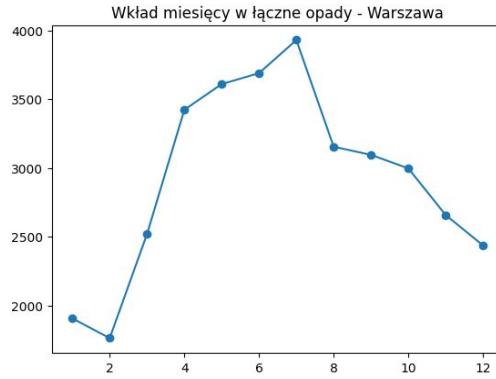
Częstochowa - regresja wielomianowa



Racibórz - regresja wielomianowa



Interpretacja wyników



Odpowiedź na pytanie badawcze



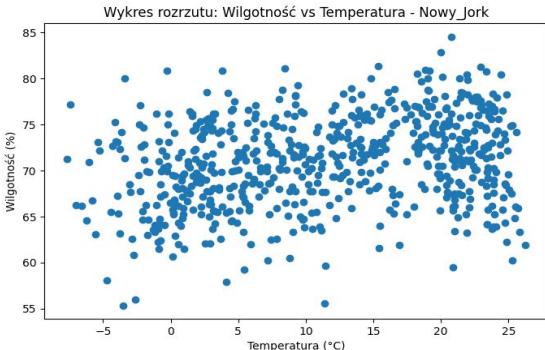
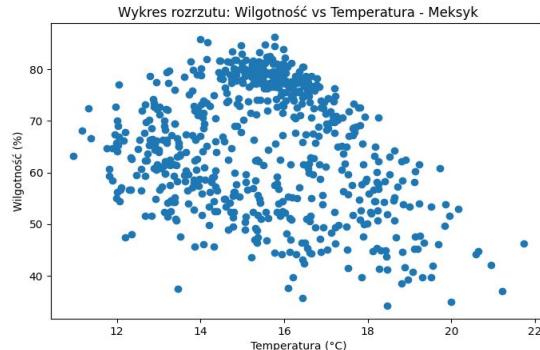
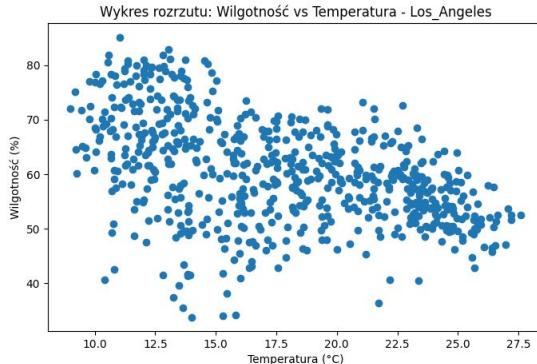
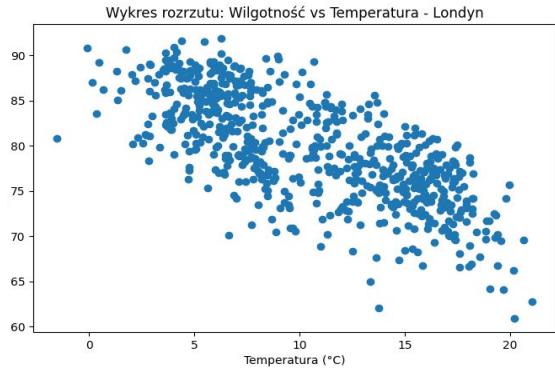
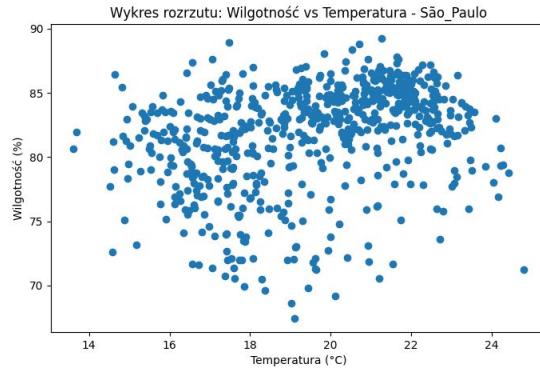
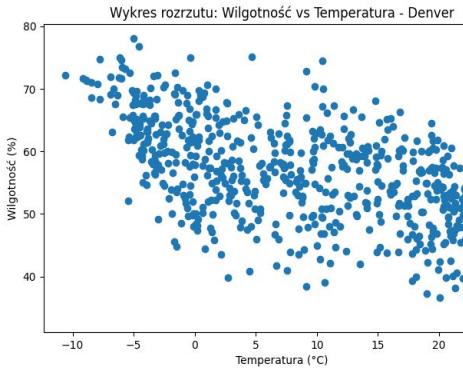
Czy wilgotność powietrza zależy od temperatury?

Lokalizacje pobranych danych

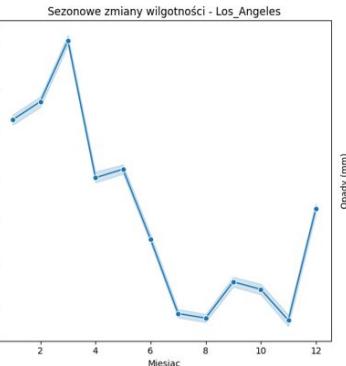
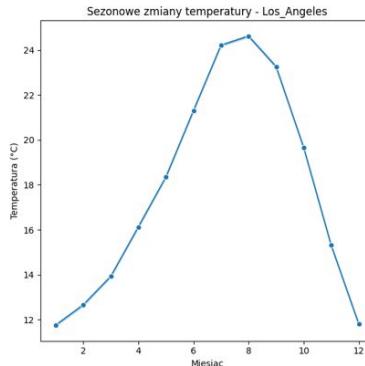
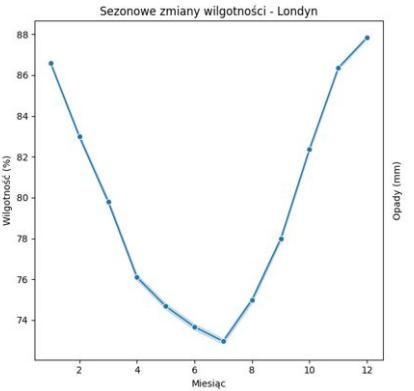
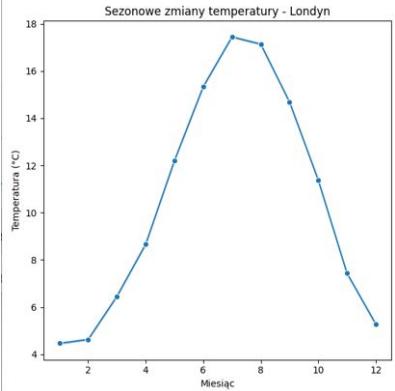
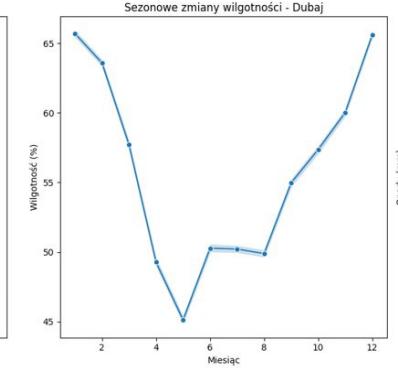
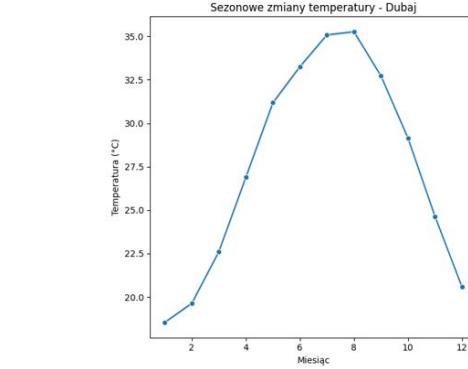
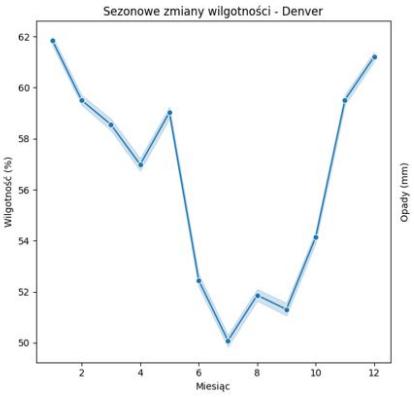
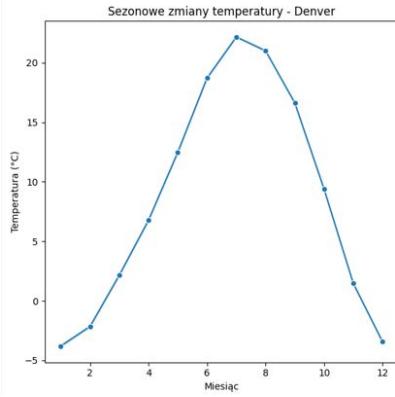




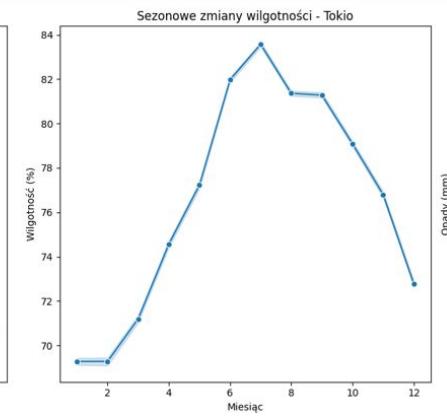
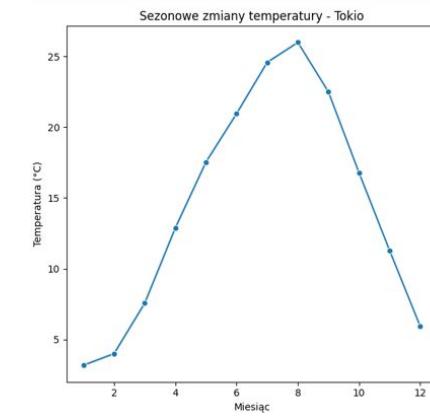
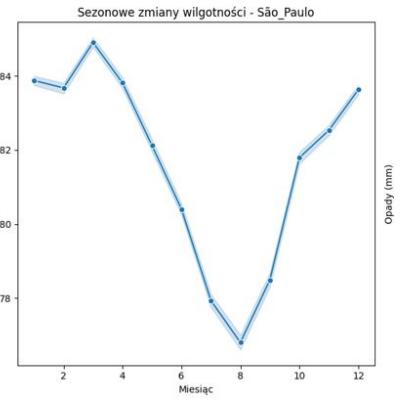
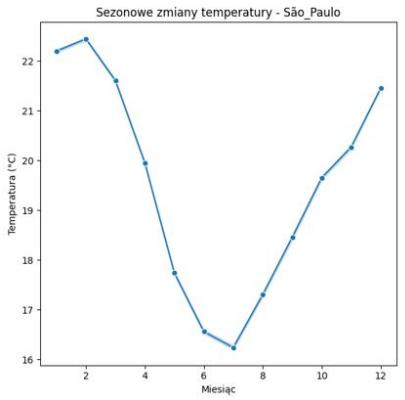
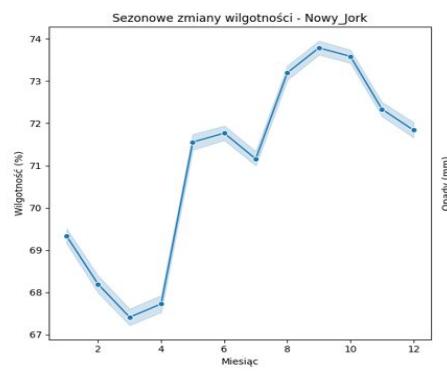
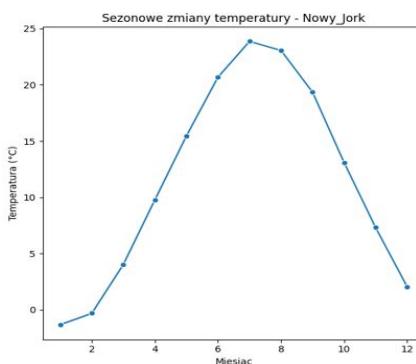
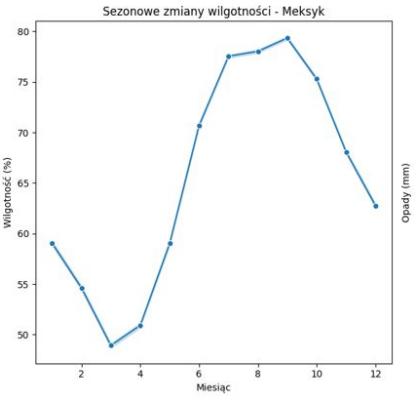
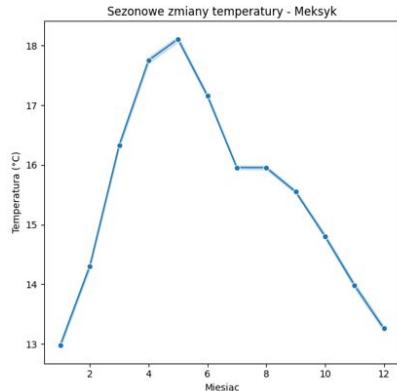
Dane na wykresie



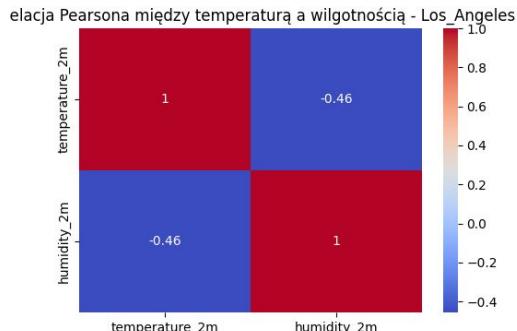
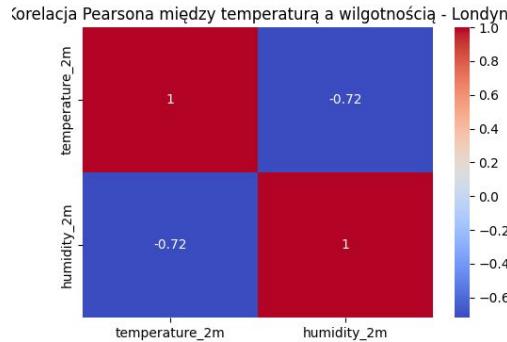
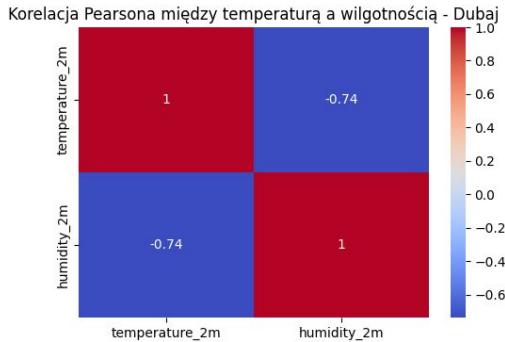
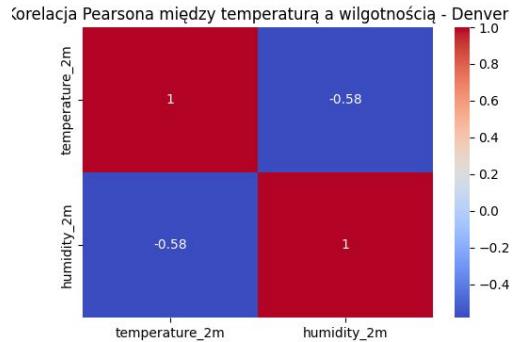
Sezonowe zmiany



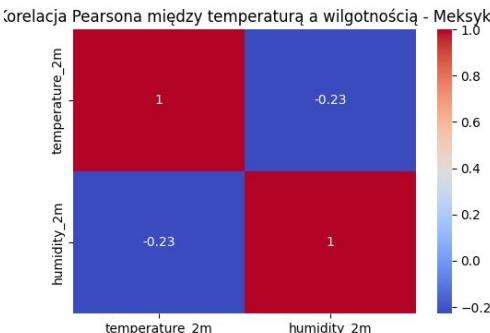
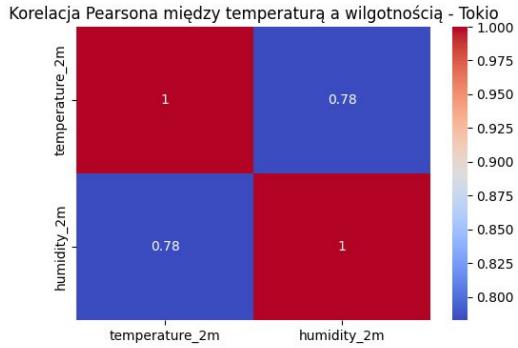
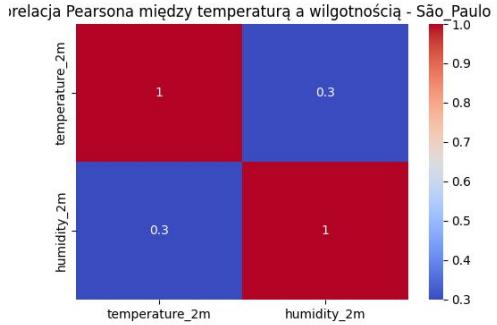
Sezonowe zmiany



Współczynnik korelacji liniowej Pearsona

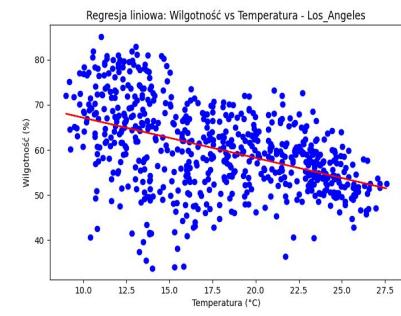
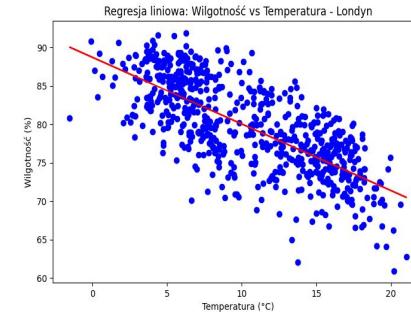
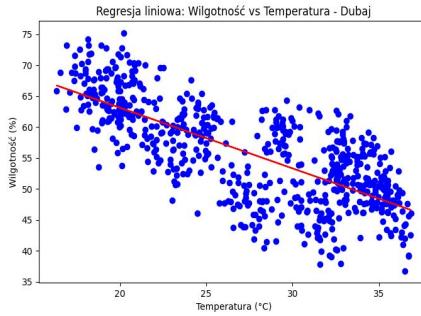
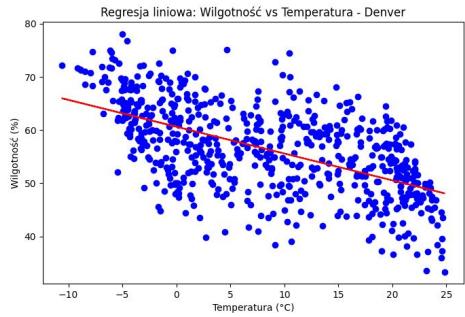


Współczynnik korelacji liniowej Pearsona



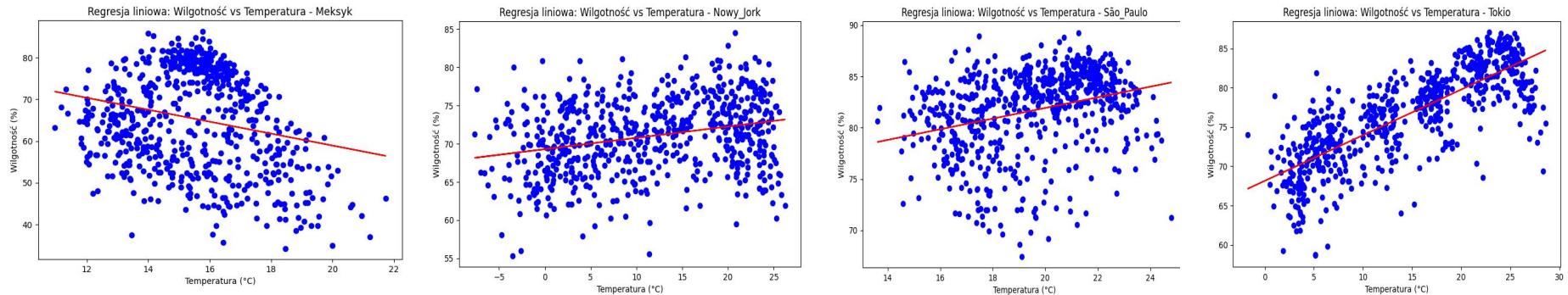


Regresja liniowa





Regresja liniowa



Odpowiedź na pytanie badawcze

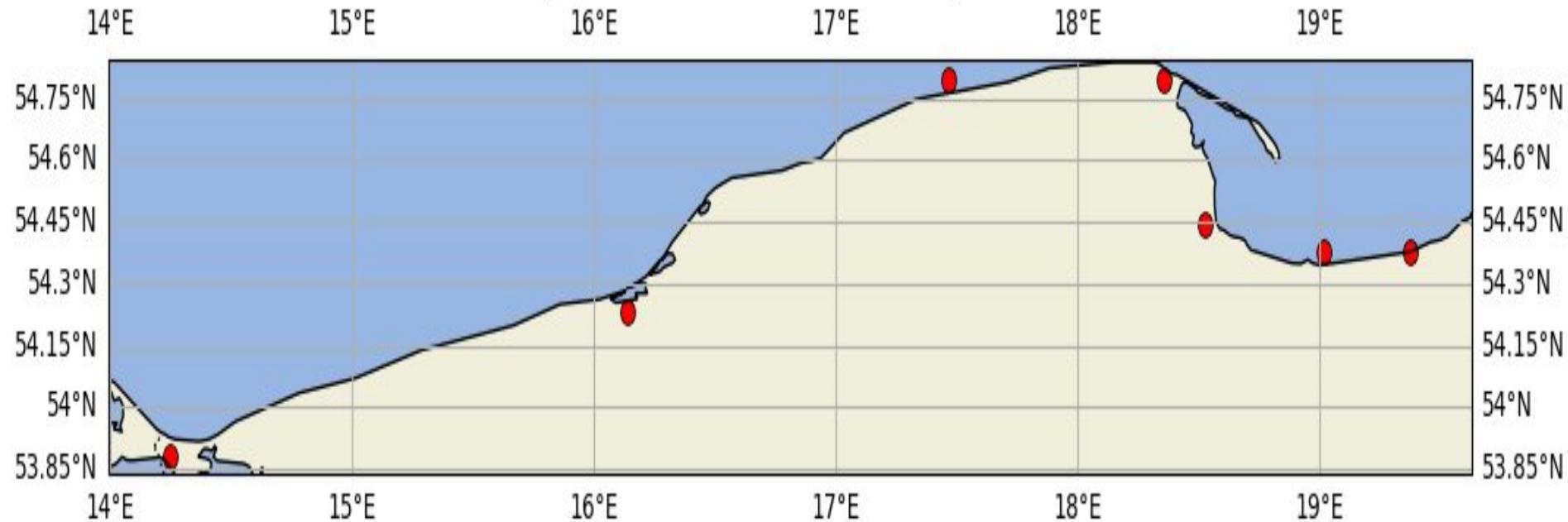


**Sztorm na Bałtyku -
kiedy się go spodziewać?**



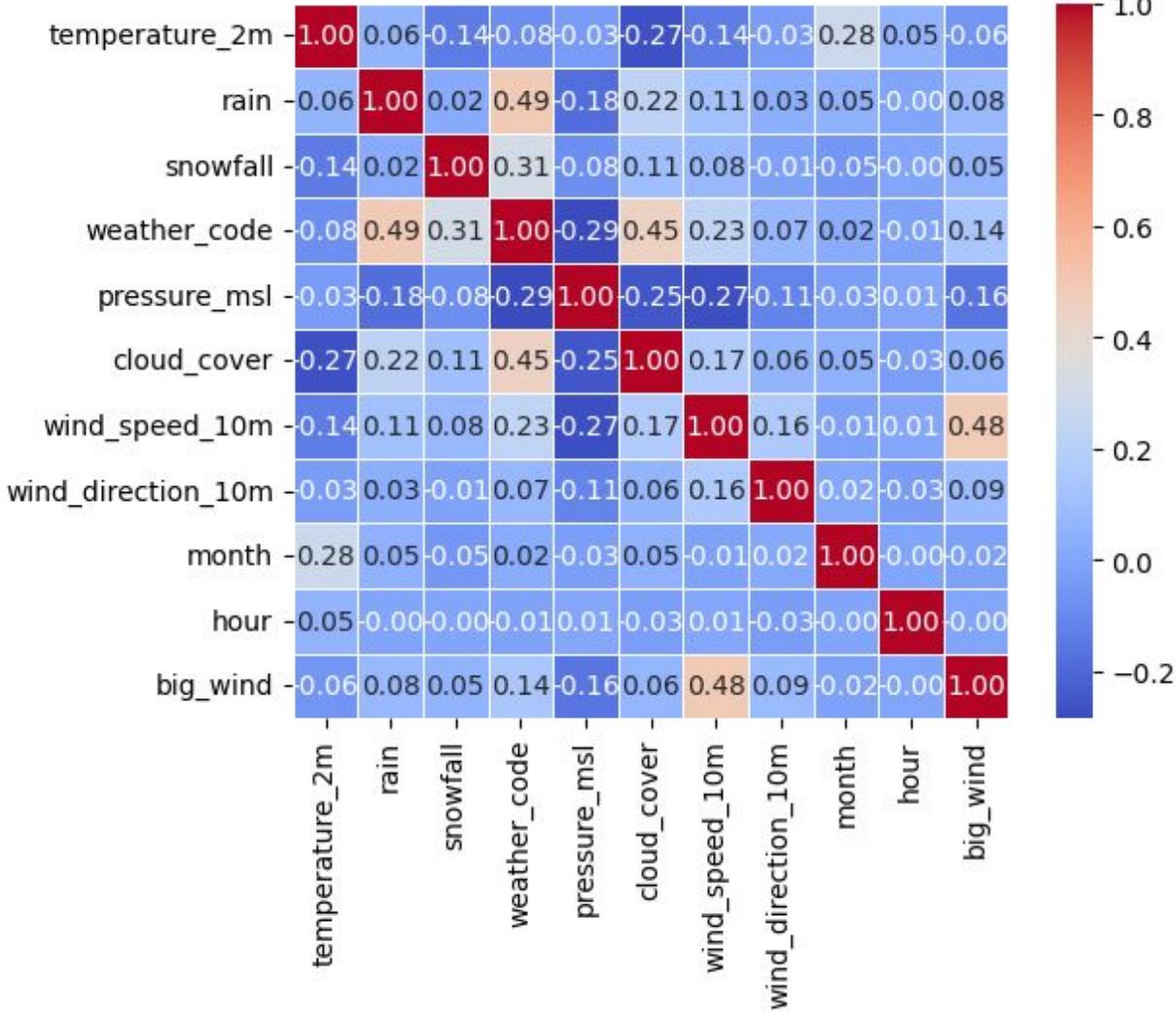
Lokalizacja pobranych danych

Geographical Plot of Latitude and Longitude Data





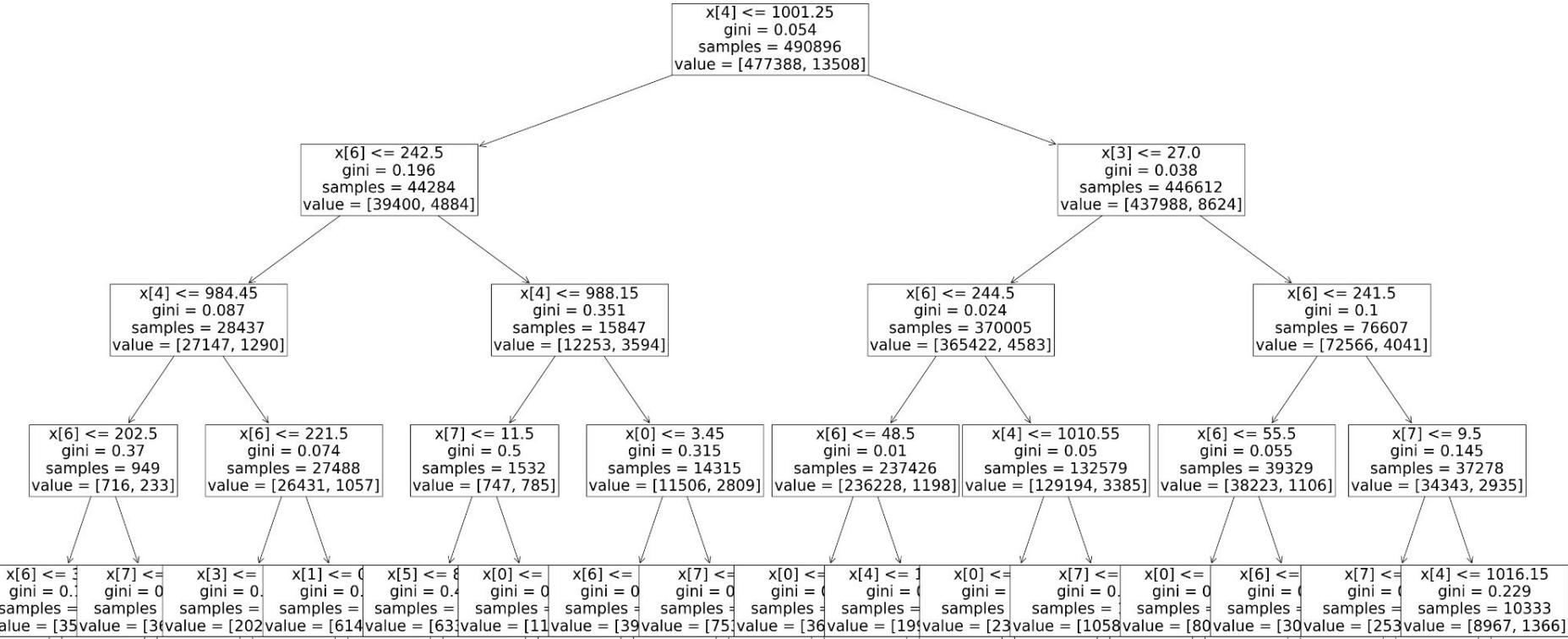
Czynniki i ich macierz korelacji



Analiza drzew decyzyjnych

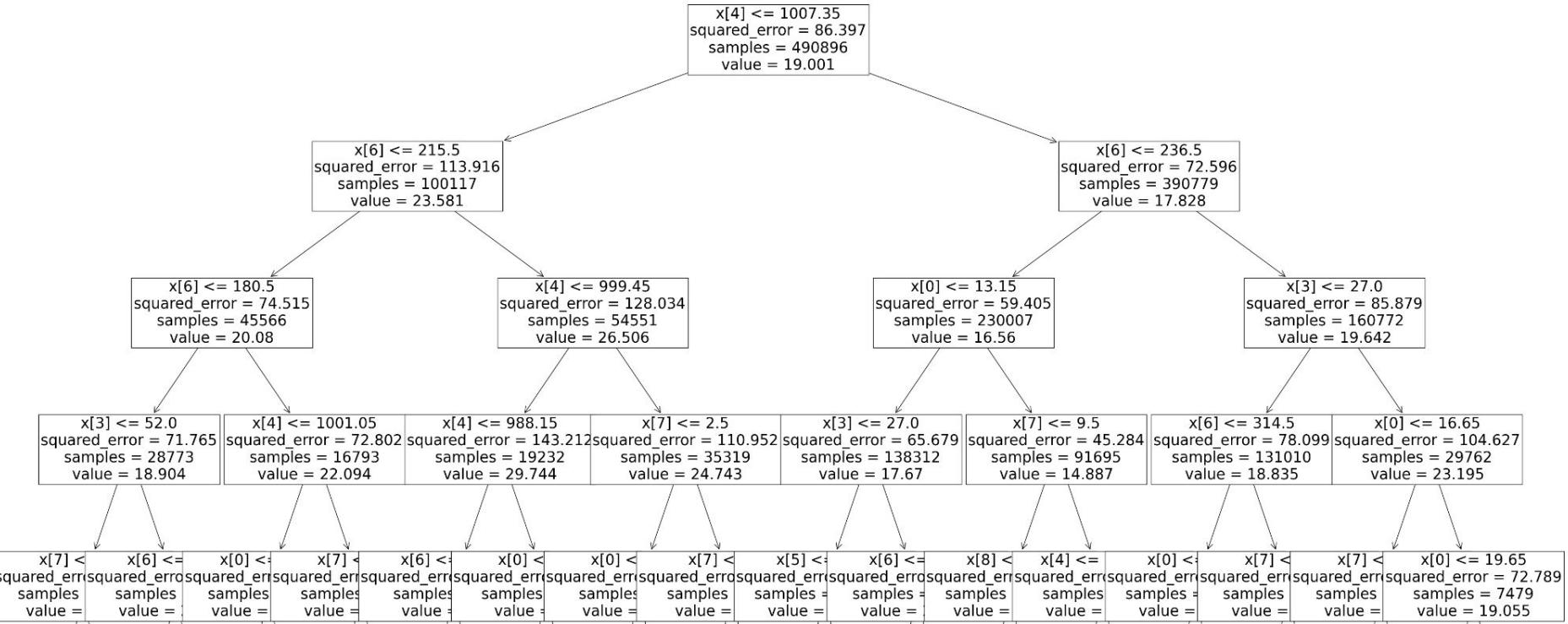


Drzewo Decyzyjne dla Klasifikatora





Drzewo Decyzyjne dla Regresora



Kluczowe czynniki



Kluczowe czynniki

Ciśnienie

Kluczowe czynniki

Ciśnienie

Kierunek Wiatru

Kluczowe czynniki

Ciśnienie

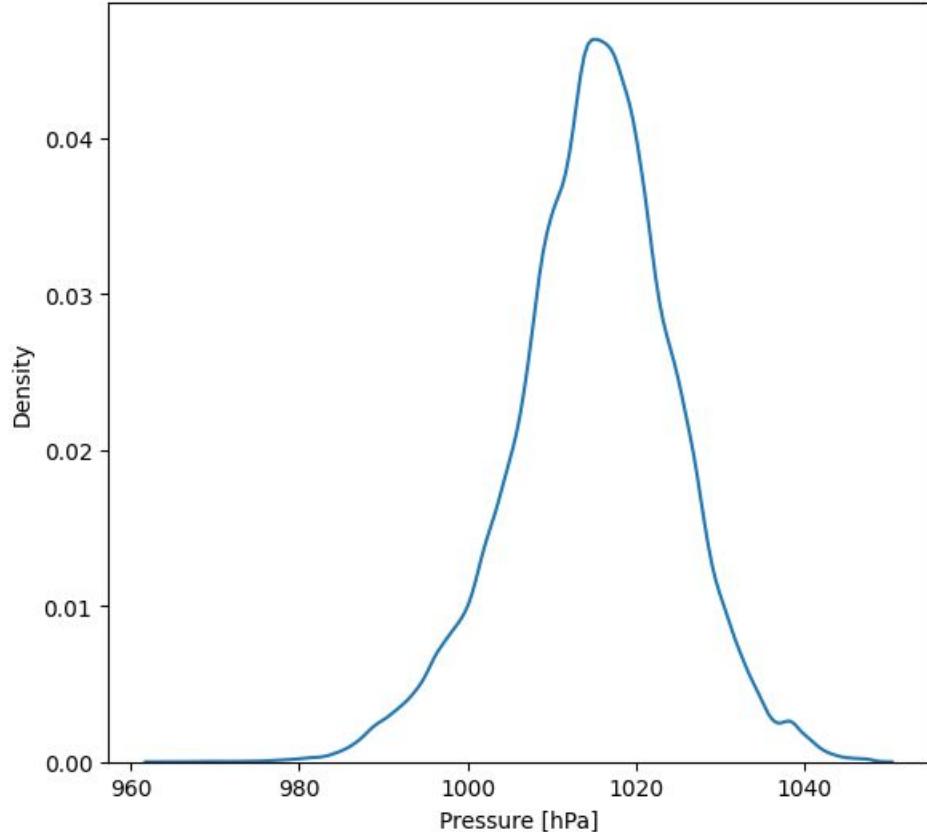
Kierunek Wiatru

Miesiąc

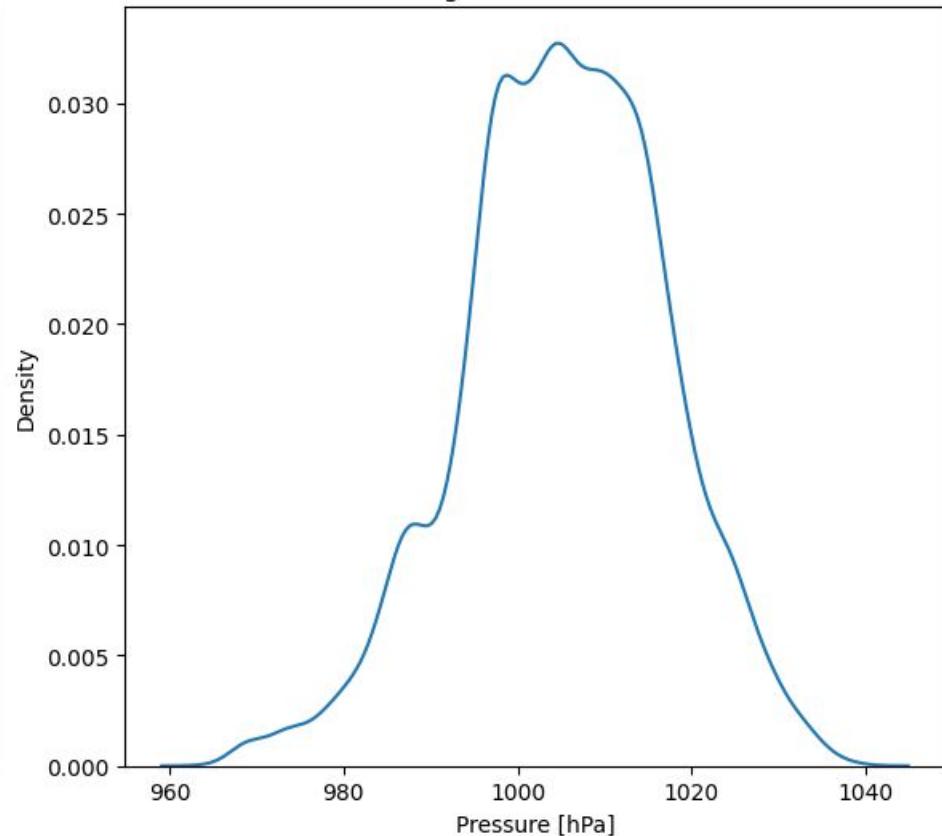
Analiza Ciśnienia

Pressure Distributions

Small winds dataset

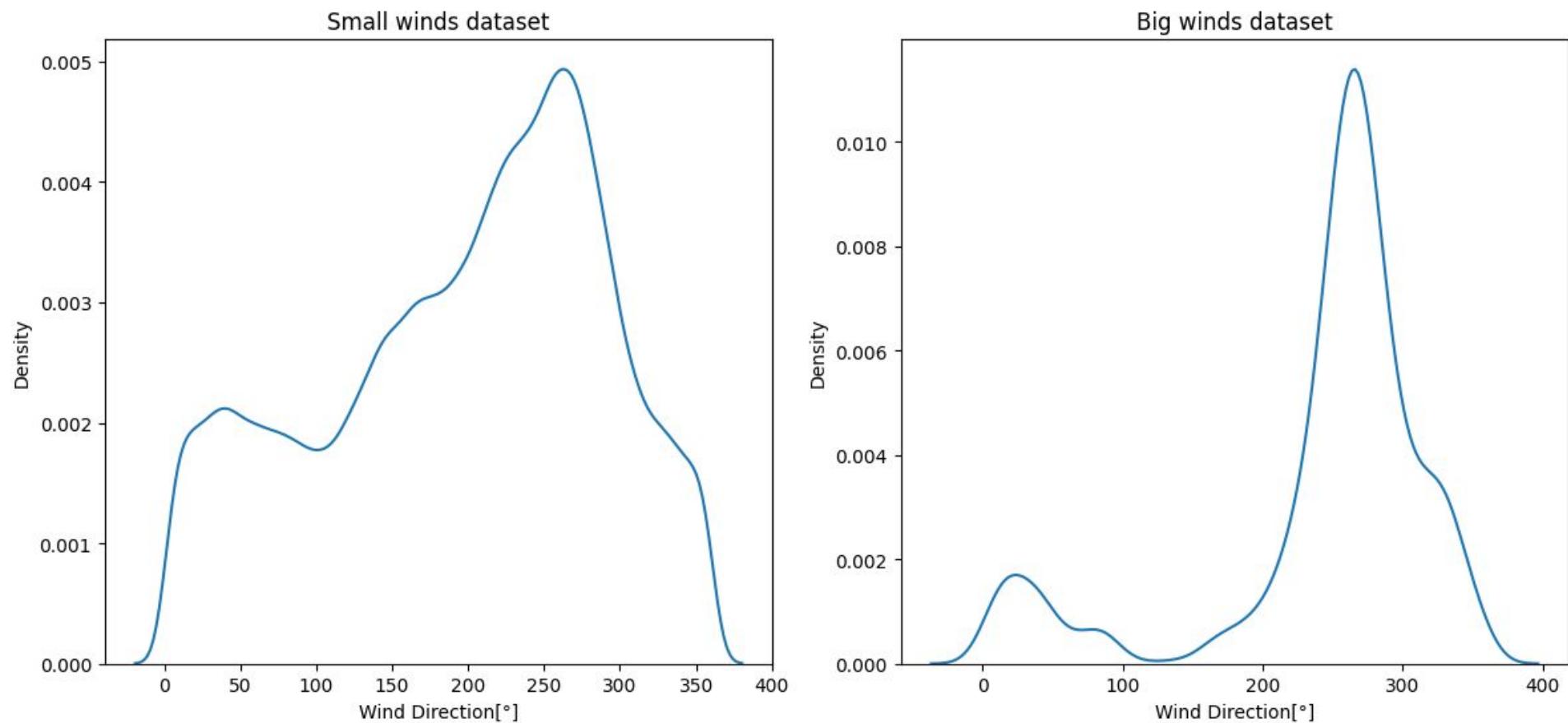


Big winds dataset



Analiza Kierunku Wiatru

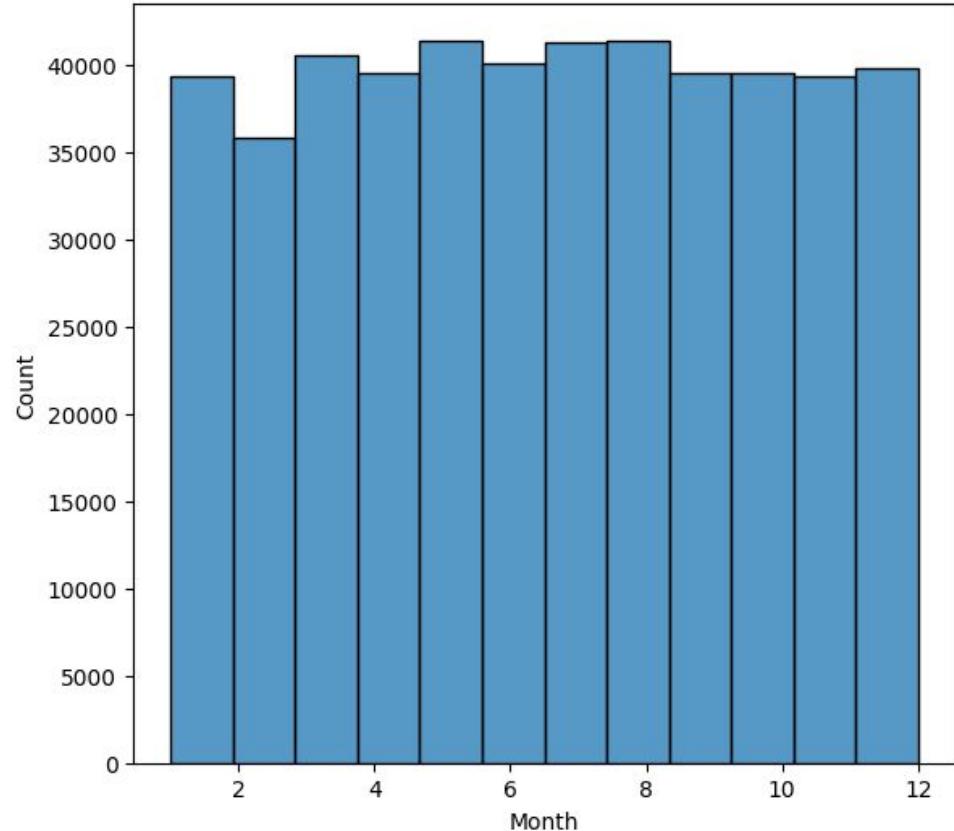
Wind Direction Distributions



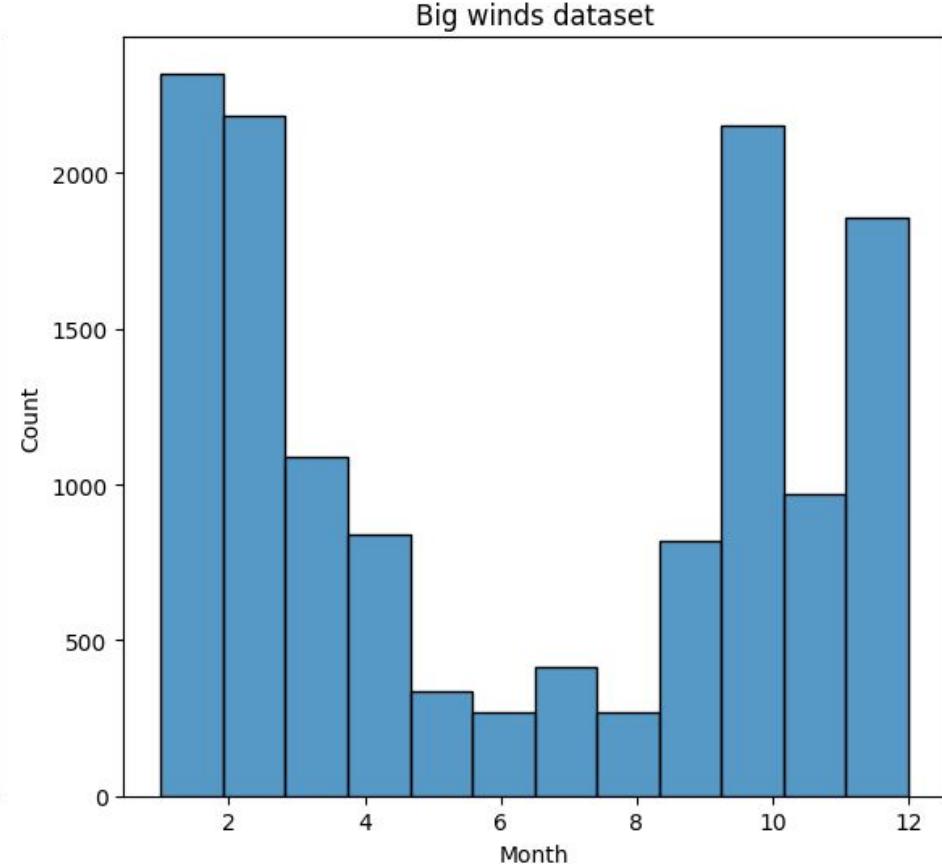
Analiza Miesiący

Month Distributions

Small winds dataset



Big winds dataset



Kiedy można
spodziewać się
sztormu?



Kiedy można spodziewać się sztormu?

Niskie ciśnienie - mniejsze od 980 hPa

Kiedy sztormu
prawie na pewno
nie będzie?

Kiedy sztormu prawie na pewno nie będzie?

Wysokie ciśnienie - większe od 1040 hPa

Kiedy sztormu prawie na pewno nie będzie?

Wysokie ciśnienie - większe od 1040 hPa

Kierunek wiatru z przedziału (100°, 200°)

Kiedy sztormu prawie na pewno nie będzie?

Wysokie ciśnienie - większe od 1040 hPa

Kierunek wiatru z przedziału (100°, 200°)

Ciepłe miesiące

**Dziękujemy za
uwagę**

