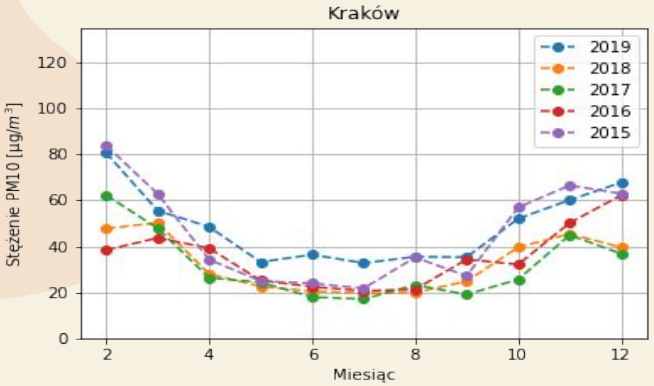
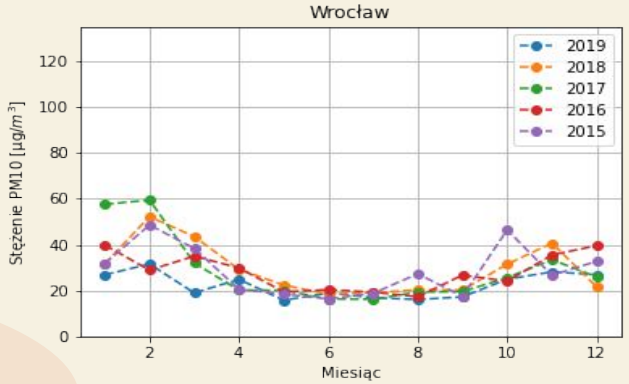
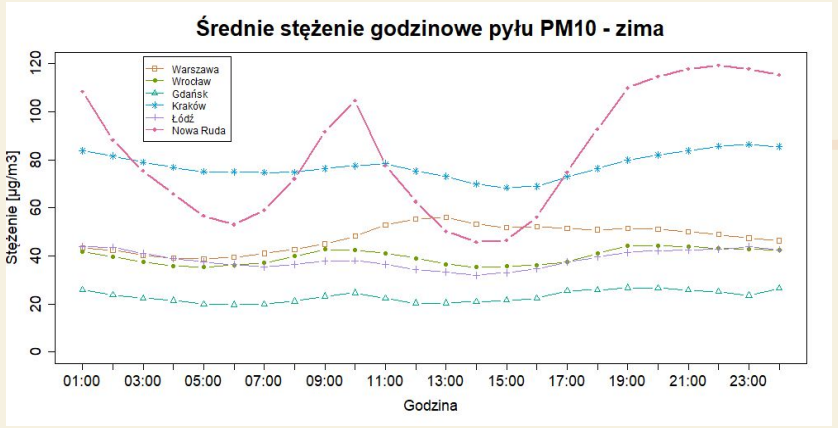
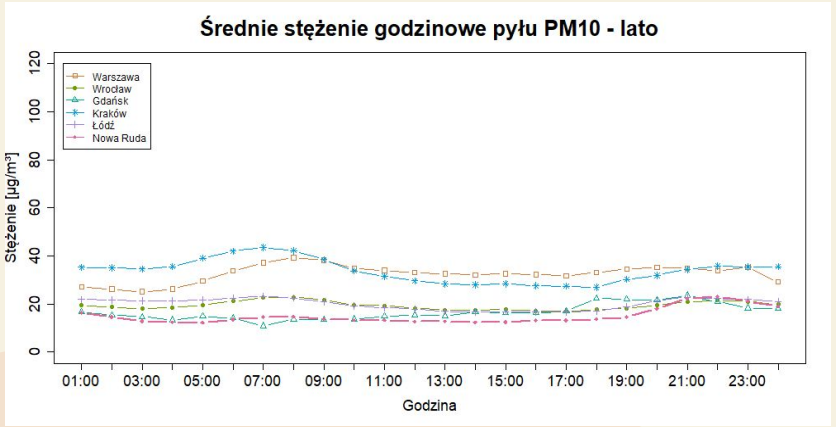
Smog jest zły

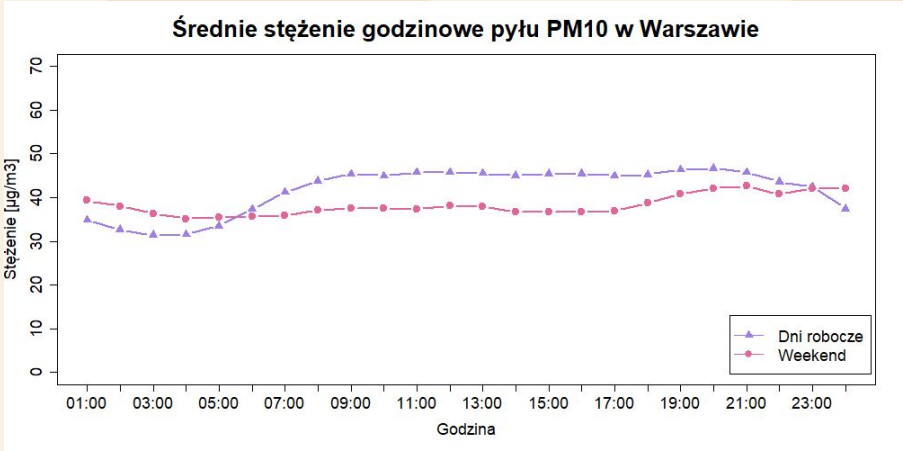
ANALIZA DANYCH

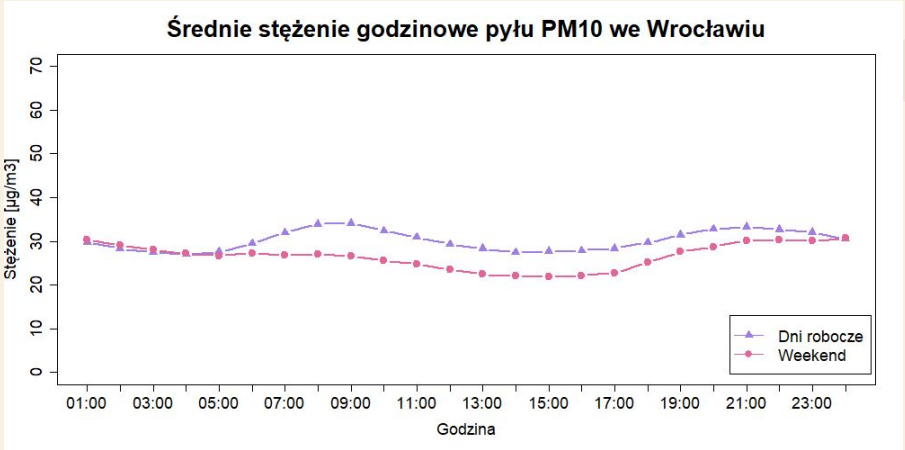




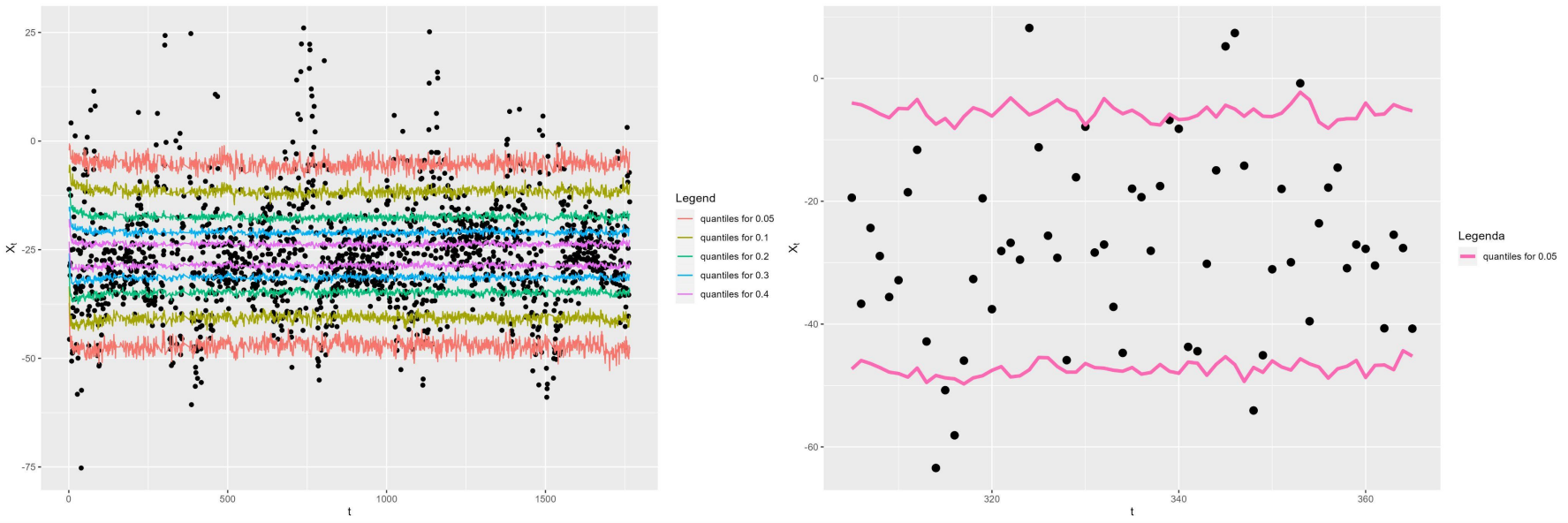





Średnie stężenie godzinowe pyłu PM10 w Warszawie
Stężenie [µg/m3]
0
10
20
30
40
50
60
70
01:00
03:00
05:00
07:00
09:00
11:00
13:00
15:00
17:00
19:00
21:00
23:00
Godzina
Dni robocze
Weekend


Średnie stężenie godzinowe pyłu PM10 we Wrocławiu
Stężenie [µg/m3]
0
10
20
30
40
50
60
70
01:00
03:00
05:00
07:00
09:00
11:00
13:00
15:00
17:00
19:00
21:00
23:00
Godzina
Dni robocze
Weekend

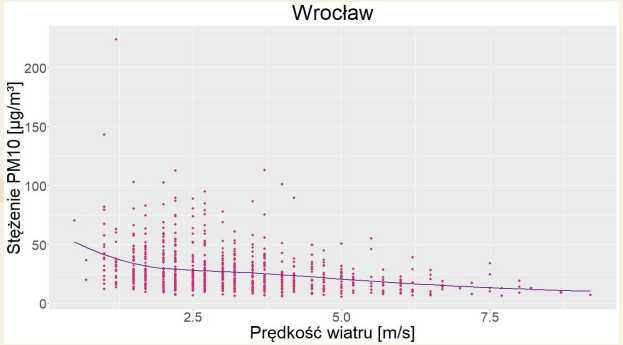
ARMA(2,1)-GARCH(1,1)

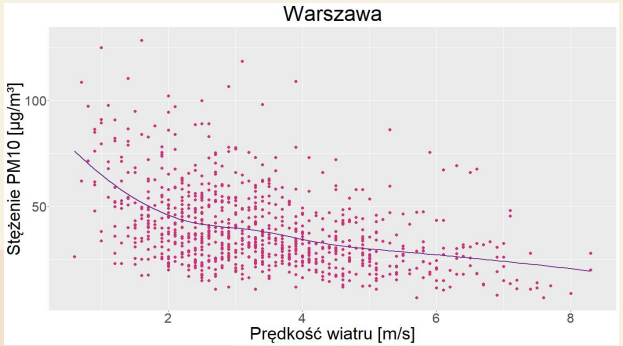


Mediana 10^4 symulacji	Treningowe	Testowe	Wszystkie
MLE	340.4935	373.9970	364.6282
sqrt(MLE)	18.4525	19.3390	19.0952
R^2	0.8975	0.6210	0.8635

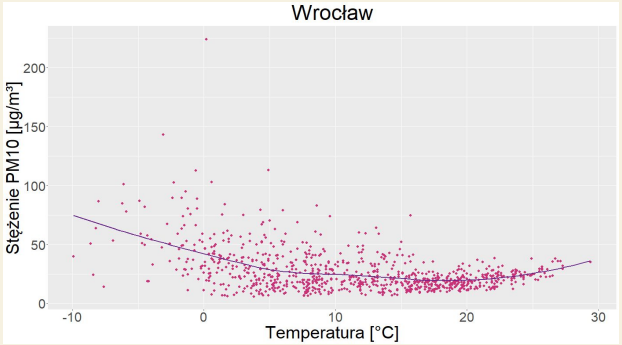
CZYNNIKI POGODOWE

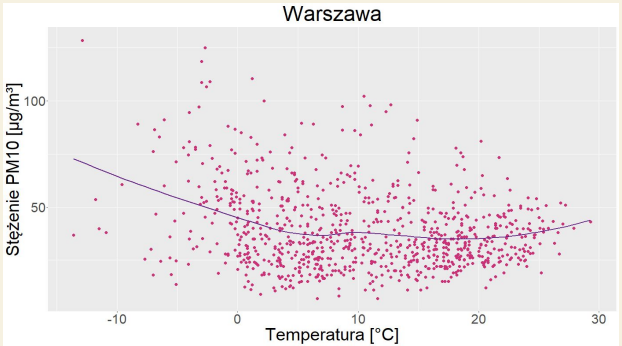
WIATR



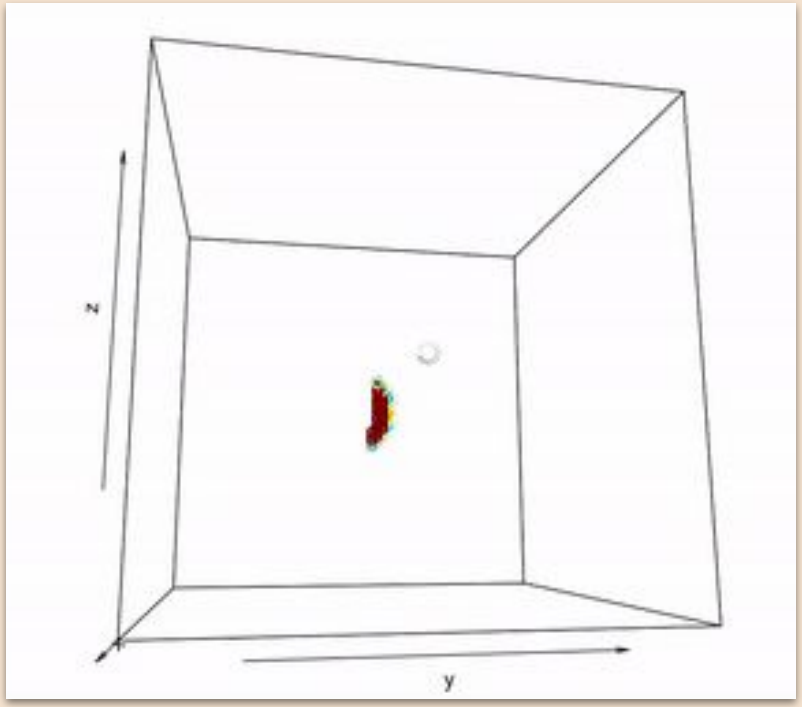


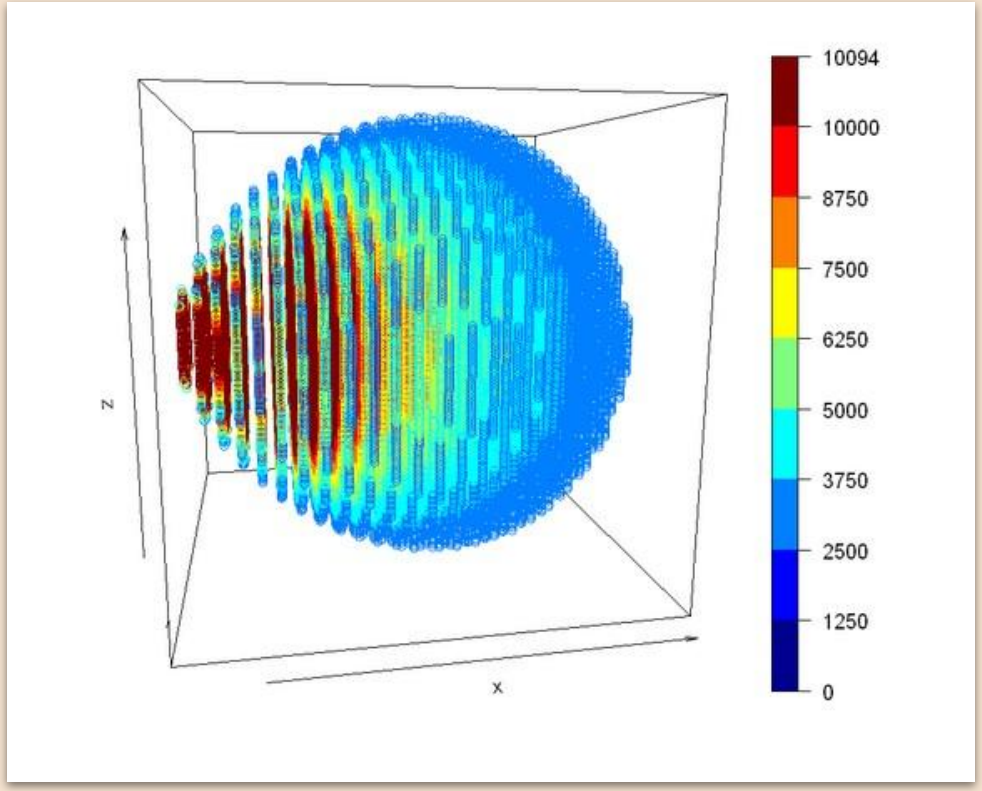
TEMPERATURA POWIETRZA

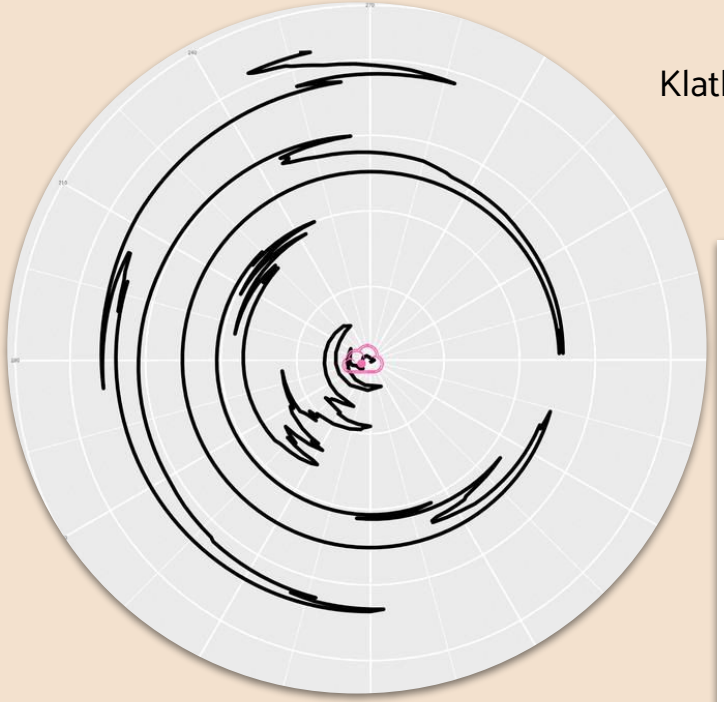




GAUSSIAN PLUME MODEL

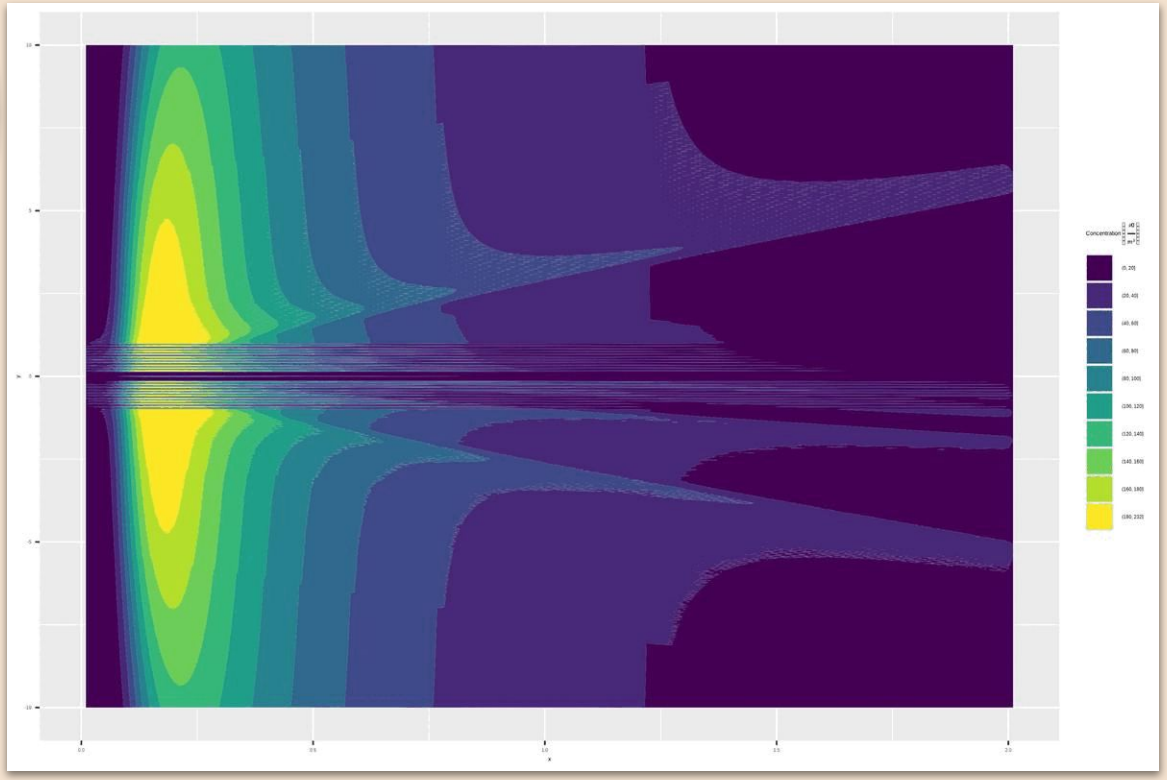




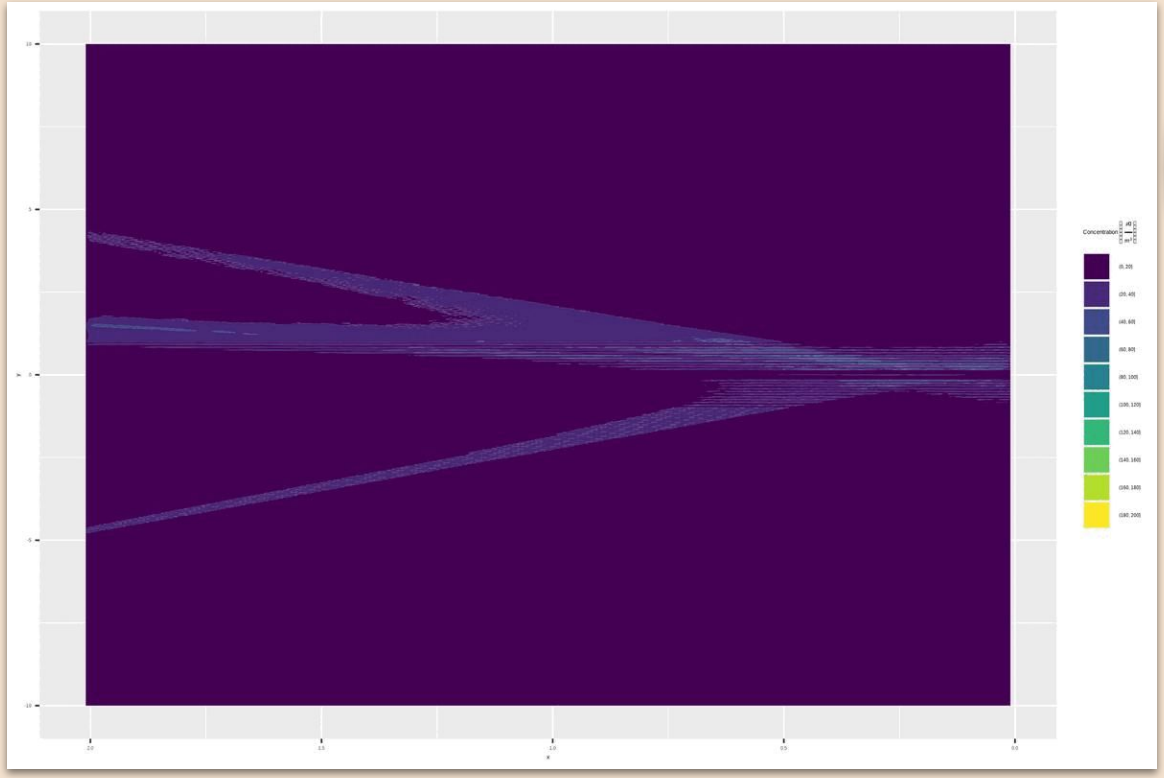


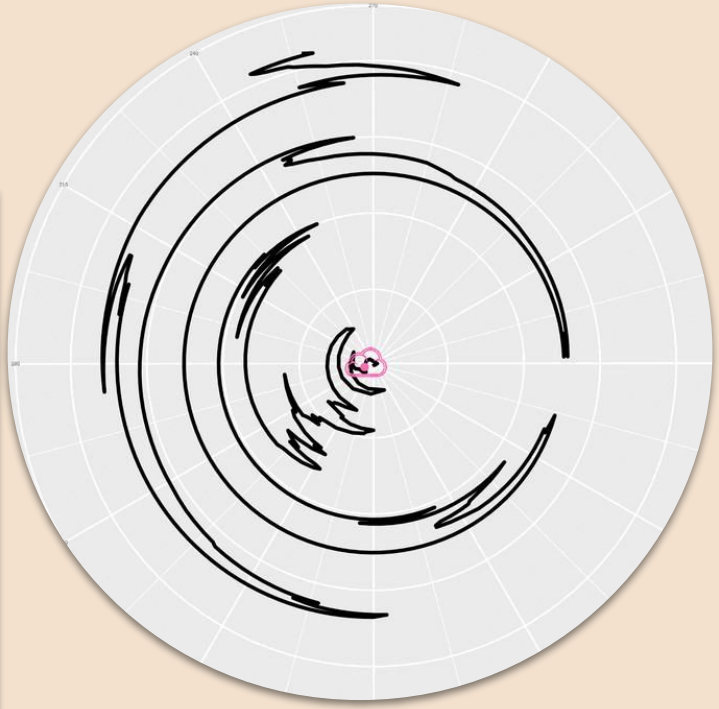
Klatki co 6h

Q	Z	H	Δt
0.01g/s	2m	10m	1h

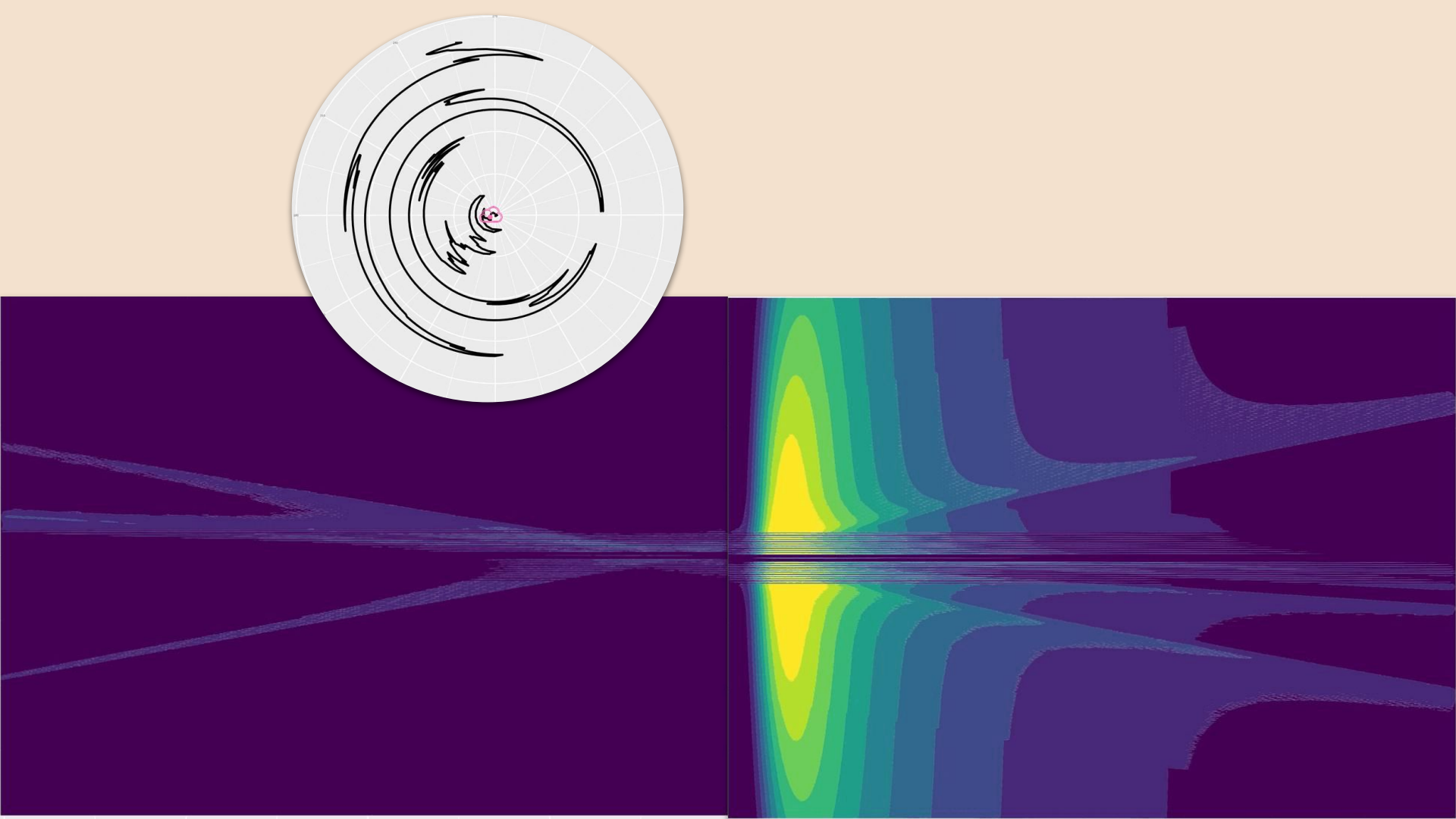


Tygodniowe rozprzestrzenianie się zanieczyszczeń w Krakowie (01.01-08.01.2021r) z uwzględnieniem kierunku wiatru.





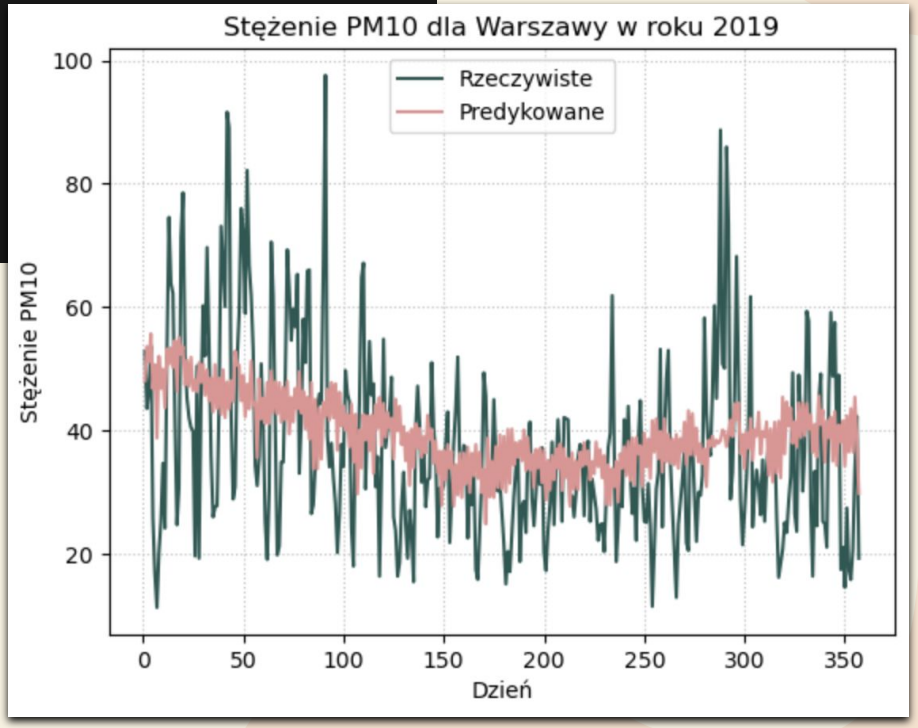
Tygodniowe rozprzestrzenianie się zanieczyszczeń w Krakowie (01.01-08.01.2021r) z uwzględnieniem kierunku wiatru.



MODEL OLS

```
x_train = PM10_train_War[['Temperature', 'Wind', 'YEAR', 'MONTH']]
x_test = PM10_test_War[['Temperature', 'Wind', 'YEAR', 'MONTH']]
y_train = PM10_train_War[['Value']]
y_test = PM10_test_War[['Value']]
model = sm.OLS(y_train, x_train)
results = model.fit()

y_pred=results.predict(x_test)
```



Wyniki klasyfikacji dla modelu OLS (na przykładzie Warszawy)

Class	Precision	Recall	F1-Score	Support
-1	0.50	0.17	0.25	66
1	0.84	0.96	0.89	291
Accuracy			0.82	357

Jakość powietrza	**PM10 [µg/m3]**
W normie (1)	0-50
Powyżej normy (-1)	≧ 50

Class	Precision	Recall	F1-Score	Support
-3	-	-	-	-
-2	-	-	-	-
-1	0.00	0.00	0.00	6
1	0.50	0.18	0.27	60
2	0.75	0.97	0.85	261
3	0.00	0.00	0.00	30
Accuracy			0.74	357

Jakość powietrza	**PM10 [µg/m3]**
Bardzo dobra (3)	0-20
Dobra (2)	20,1-50
Umiarkowana (1)	50,1-80
Dostateczna (-1)	80,1-110
Zła (-2)	110,1-150
Bardzo zła (-3)	>150

Wyniki klasyfikacji dla modelu Random Forest

Dane treningowe

Class	Precision	Recall	F1-Score	Support
-1	0.81	0.53	0.64	1286
1	0.90	0.97	0.93	5592
Accuracy			0.89	6878

Dane testowe

Class	Precision	Recall	F1-Score	Support
-1	0.60	0.36	0.45	292
1	0.88	0.95	0.91	1432
Accuracy			0.85	1724

Jakość powietrza	**PM10 [µg/m3]**
W normie (1)	0-50
Powyżej normy (-1)	≧ 50

Dane treningowe

Class	Precision	Recall	F1-Score	Support
-3	0.60	0.29	0.39	41
-2	0.90	0.09	0.16	103
-1	0.87	0.06	0.11	232
1	0.56	0.29	0.38	884
2	0.70	0.90	0.79	3776
3	0.78	0.64	0.71	1842
Accuracy			0.	6878

Dane testowe

Class	Precision	Recall	F1-Score	Support
-3	0.00	0.00	0.00	5
-2	0.00	0.00	0.00	20
-1	0.00	0.00	0.00	52
1	0.35	0.18	0.23	215
2	0.64	0.84	0.73	948
3	0.67	0.51	0.58	484
Accuracy			0.63	1724

Jakość powietrza	**PM10 [µg/m3]**
Bardzo dobra (3)	0-20
Dobra (2)	20,1-50
Umiarkowana (1)	50,1-80
Dostateczna (-1)	80,1-110
Zła (-2)	110,1-150
Bardzo zła (-3)	>150

DZIĘKUJEMY ZA UWAGĘ!

PREZENTACJĘ PRZYGOTOWALI:

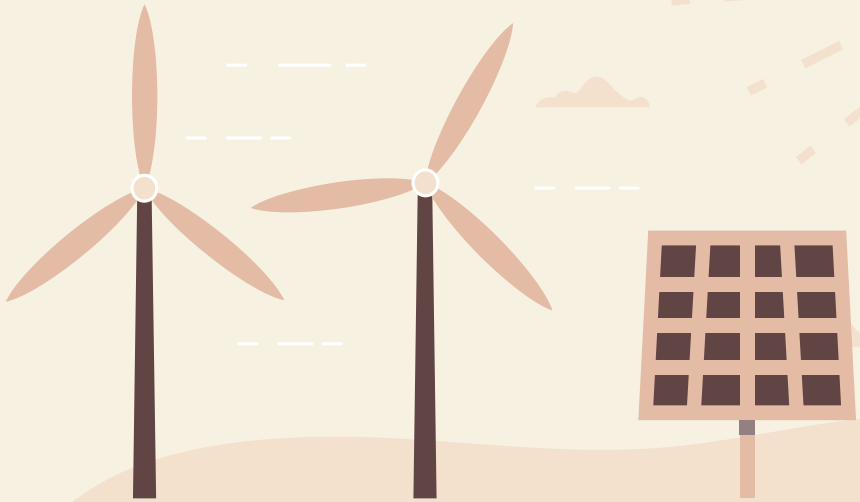
Paulina Iwach

Julia Mazur

Ewa Trębacz

Małgorzata Kowalczyk

Kamil Kowalski



GITHUB

https://github.com/Swinkawkrawacie/Matematyka_dla_przemyslu