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import matplotlib.pyplot as plt
import pandas as pd

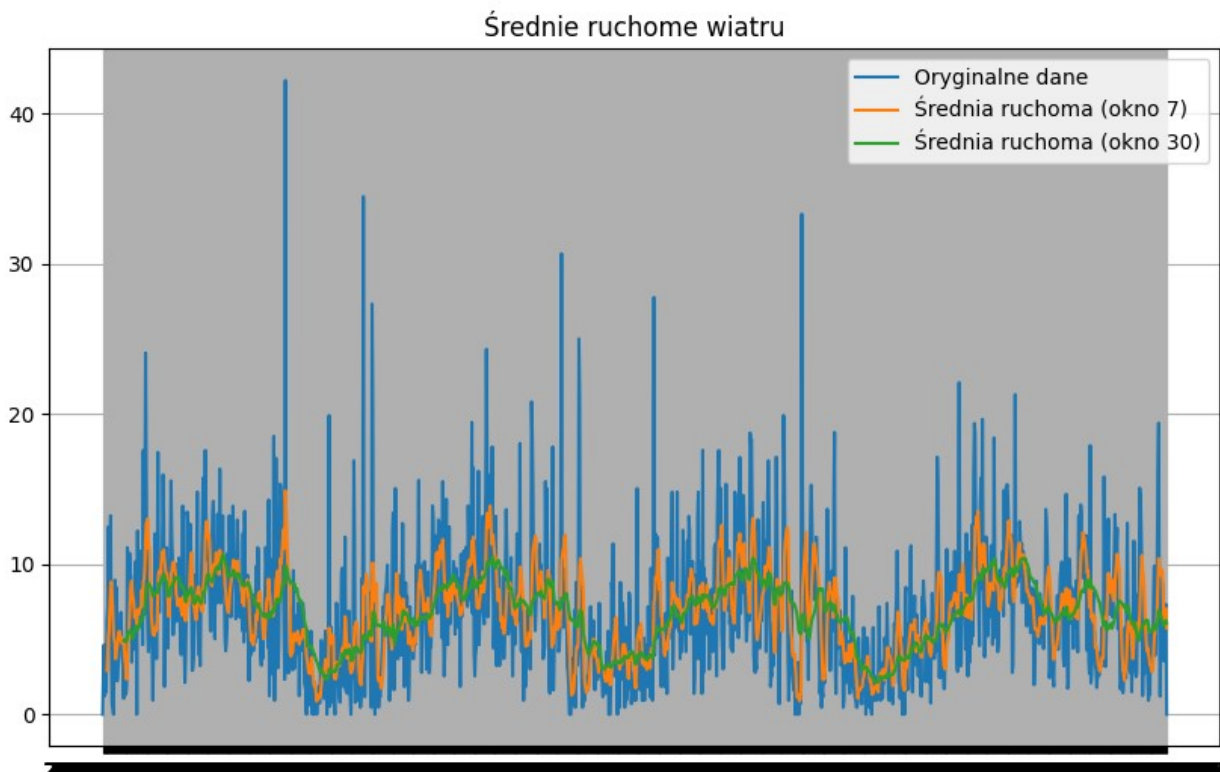
data = pd.read_csv('DailyDelhiClimateTrain.csv')

# Sortowanie danych po dacie
data = data.sort_values(by='date')
data.set_index('date', inplace=True)

# Obliczanie średnich ruchomych
data['MA_7'] = data['wind_speed'].rolling(window=7).mean()
data['MA_30'] = data['wind_speed'].rolling(window=30).mean()

# Wizualizacja
plt.figure(figsize=(10, 6))
plt.plot(data['wind_speed'], label="Oryginalne dane")
plt.plot(data['MA_7'], label="Średnia ruchoma (okno 7)")
plt.plot(data['MA_30'], label="Średnia ruchoma (okno 30)")
plt.title("Średnie ruchome wiatru")
plt.legend()
plt.grid()
plt.show()

```

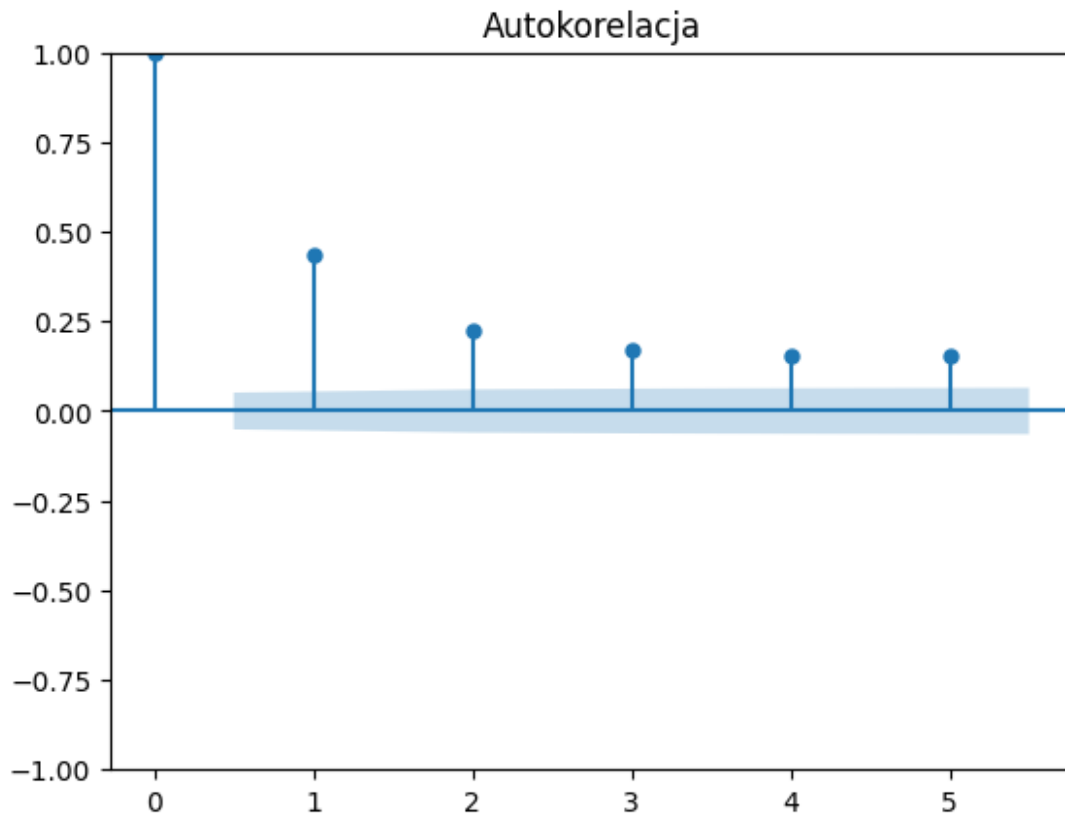


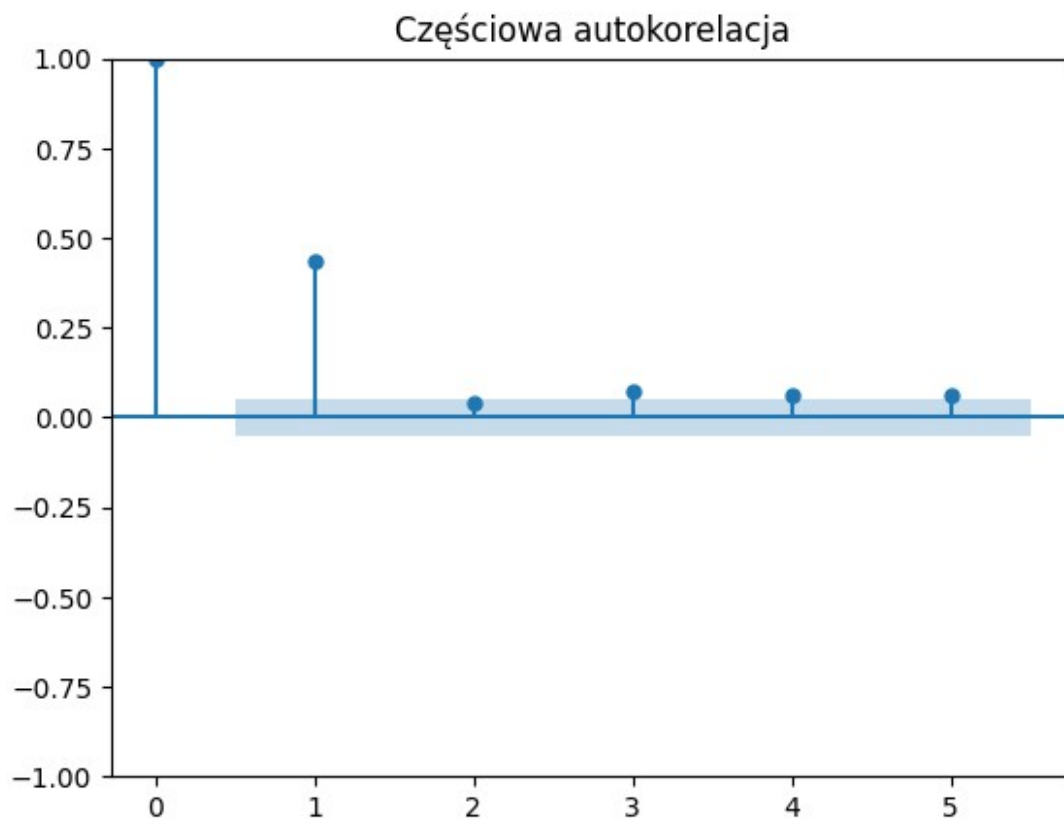
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from statsmodels.graphics.tsaplots import plot_acf, plot_pacf

```

```
# ACF i PACF
plot_acf(data['wind_speed'], lags=5, title="Autokorelacja")
plot_pacf(data['wind_speed'], lags=5, title="Częściowa autokorelacja",
method='ywm')
plt.show()
```





```
from statsmodels.tsa.seasonal import seasonal_decompose  
  
# Dekompozycja addytywna  
result = seasonal_decompose(data['wind_speed'], model='additive',  
period=365)  
result.plot()  
plt.show()
```

