

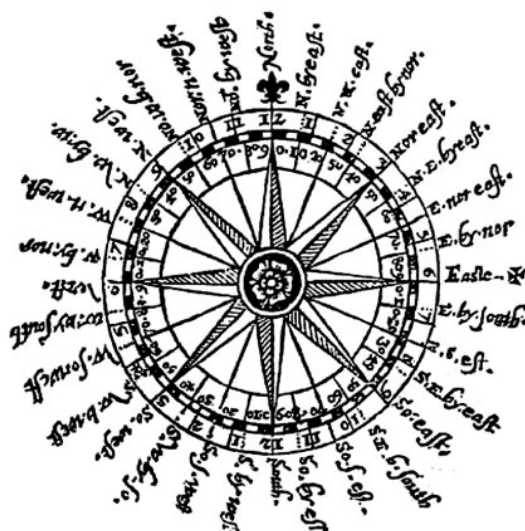
# Charakterystyka przepływu powietrza nad centralną częścią polskiego wybrzeża

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Characteristics of the airflow over the central part of the Polish  
coast

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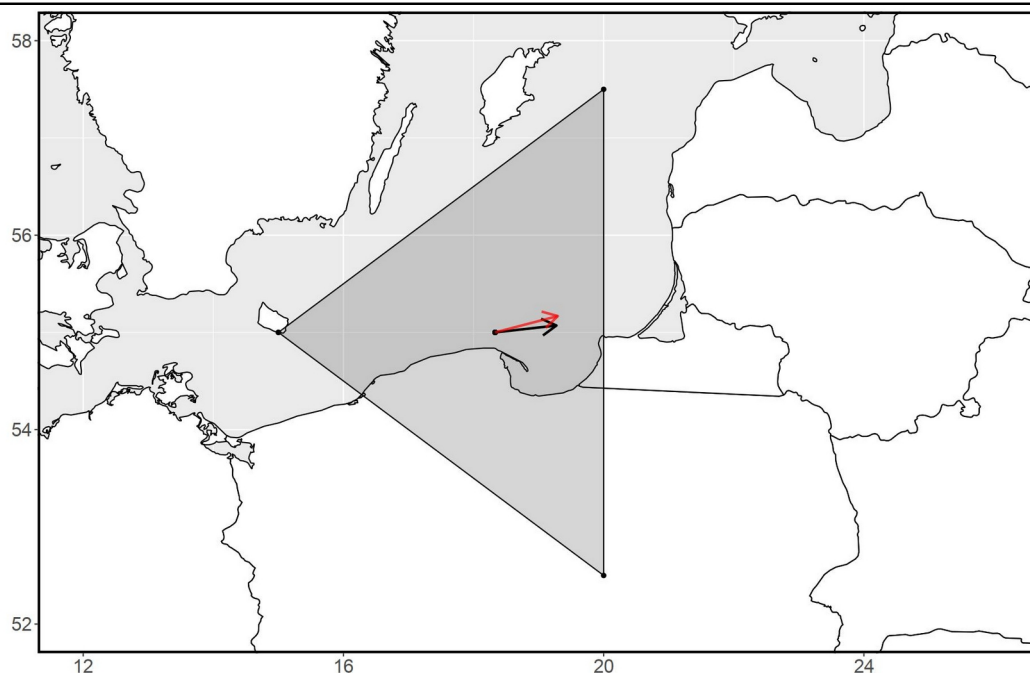
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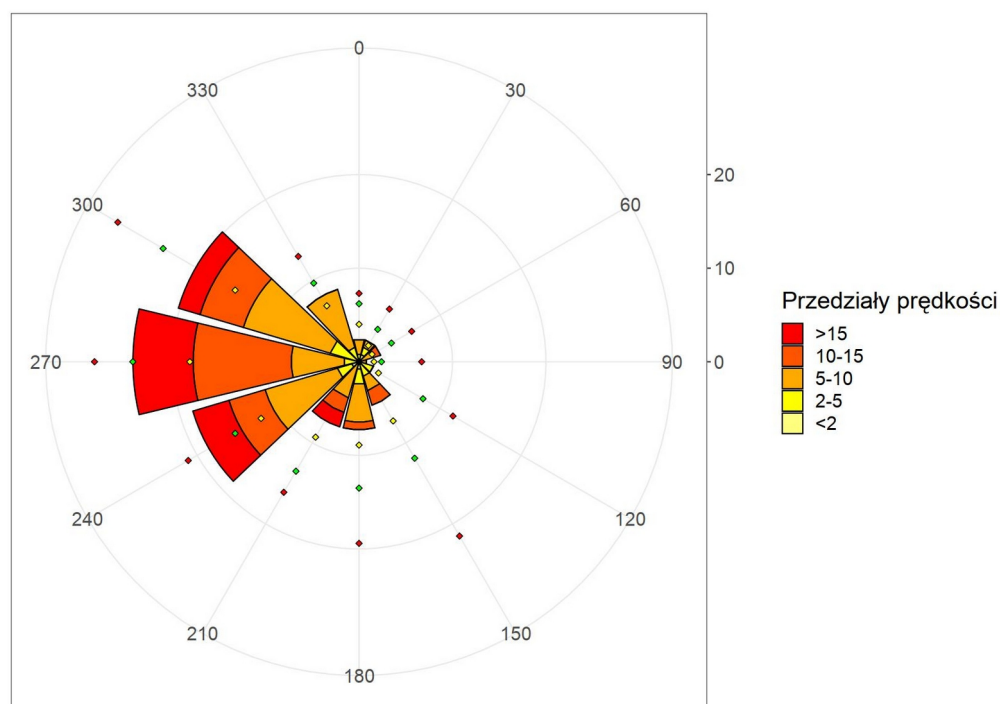
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Rys. 1. Średni miesięczny wektor wiatru geostroficznego (czarna strzałka) wraz z wektorem z okresu referencyjnego (1971-2000) (czerwona strzałka)

Fig. 1. Average monthly geostrophic wind vector (black arrow) with reference period vector (1971-2000) (red arrow)



Rys. 2. Róża wiatrów oraz wieloletnie (1971-2000) charakterystyki statystyczne częstości występowania kierunków: mediana (żółty), kwantyl 75% (zielony), kwantyl 90% (czerwony)

Fig. 2. Wind rose together with reference period (1971-2000) characteristics of directions frequency: median (yellow diamond), quantile 75% (green diamond) and quantile 90% (red diamond)

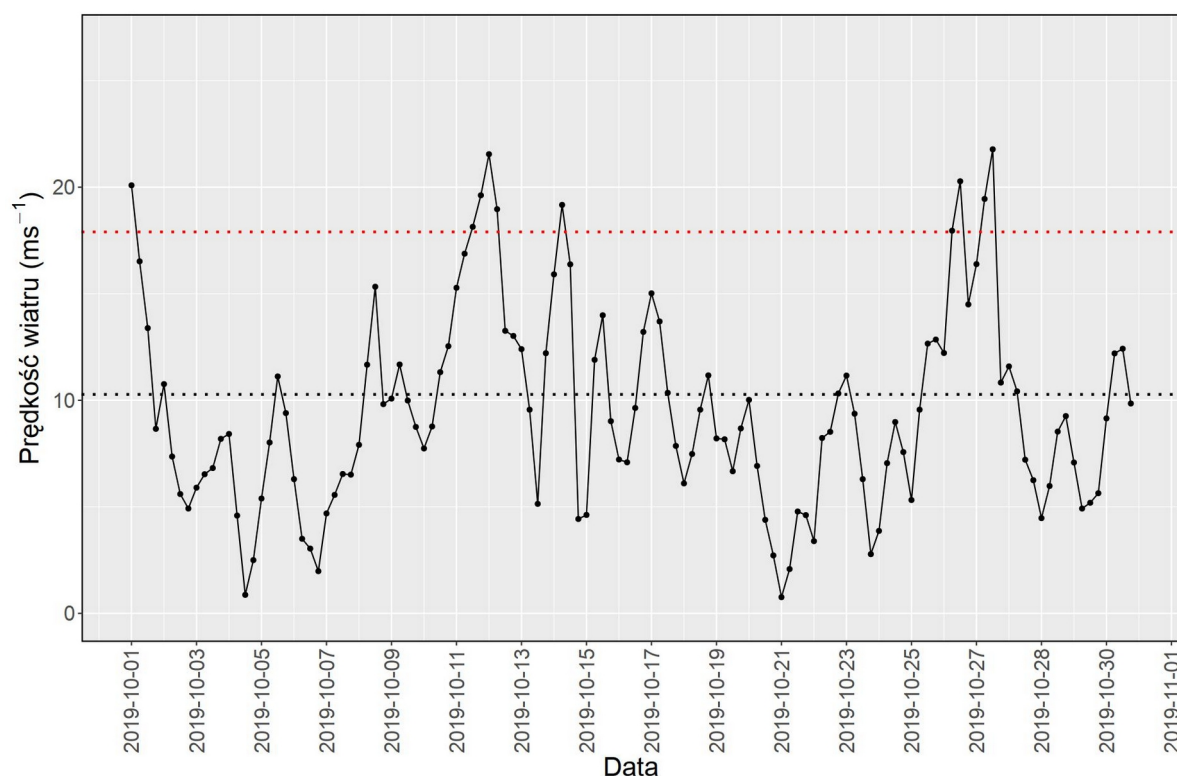
Tabela 1. Przebieg wartości składowych ( $u$  – równoleżnikowa,  $v$  – południkowa) oraz prędkości wiatru geostroficznego ( $V$ ) [ $\text{ms}^{-1}$ ]Table 1. Course of geostrophic wind vector components ( $u$  – zonal,  $v$  – meridional) and speed ( $V$ ) [ $\text{ms}^{-1}$ ]

| Data | V    |      |      |      | u    |      |      |      | v    |      |       |      |
|------|------|------|------|------|------|------|------|------|------|------|-------|------|
|      | 0    | 6    | 12   | 18   | 0    | 6    | 12   | 18   | 0    | 6    | 12    | 18   |
| 1    | 20.1 | 16.5 | 13.4 | 8.7  | 18.6 | 16.5 | 13.3 | 8.6  | -7.7 | 0.1  | 1.8   | 0.5  |
| 2    | 10.8 | 7.4  | 5.6  | 4.9  | 9.5  | 6.2  | 1.2  | 4.6  | -5.1 | -3.9 | -5.5  | -1.9 |
| 3    | 5.9  | 6.5  | 6.8  | 8.2  | 5.6  | 6.5  | 4.7  | 4.3  | 1.7  | -0.3 | -4.9  | -7.0 |
| 4    | 8.4  | 4.6  | 0.9  | 2.5  | 4.9  | 4.0  | 0.2  | -2.3 | -6.9 | -2.2 | 0.8   | 1.0  |
| 5    | 5.4  | 8.0  | 11.1 | 9.4  | -5.4 | -7.3 | -8.7 | -6.9 | 0.2  | -3.3 | -7.0  | -6.4 |
| 6    | 6.3  | 3.5  | 3.0  | 2.0  | -3.4 | -1.5 | -0.5 | -0.7 | -5.3 | -3.2 | -3.0  | -1.9 |
| 7    | 4.7  | 5.6  | 6.5  | 6.5  | 1.4  | 3.8  | 5.3  | 6.1  | -4.5 | -4.1 | -3.8  | -2.3 |
| 8    | 7.9  | 11.7 | 15.3 | 9.8  | 7.8  | 8.7  | 6.8  | 7.2  | 1.2  | 7.8  | 13.7  | 6.7  |
| 9    | 10.1 | 11.7 | 10.0 | 8.8  | 9.9  | 11.6 | 9.6  | 7.9  | 2.1  | 1.7  | 2.8   | 3.9  |
| 10   | 7.7  | 8.8  | 11.3 | 12.5 | 6.1  | 8.6  | 11.3 | 12.5 | 4.7  | 1.7  | -1.0  | 0.0  |
| 11   | 15.3 | 16.9 | 18.1 | 19.6 | 15.3 | 16.2 | 16.8 | 18.8 | 0.7  | 4.9  | 6.7   | 5.8  |
| 12   | 21.6 | 19.0 | 13.3 | 13.0 | 21.2 | 19.0 | 13.1 | 12.7 | 3.9  | 0.9  | -2.3  | -3.0 |
| 13   | 12.4 | 9.6  | 5.1  | 12.2 | 12.1 | 9.5  | 4.4  | 3.8  | -2.6 | -0.8 | 2.6   | 11.6 |
| 14   | 15.9 | 19.2 | 16.4 | 4.4  | 9.8  | 19.0 | 14.6 | 4.0  | 12.6 | -2.6 | -7.4  | -2.0 |
| 15   | 4.6  | 11.9 | 14.0 | 9.0  | -2.3 | -5.8 | -6.5 | -3.5 | 4.0  | 10.4 | 12.4  | 8.3  |
| 16   | 7.2  | 7.1  | 9.6  | 13.2 | 0.2  | 1.4  | 5.9  | 11.8 | 7.2  | 6.9  | 7.6   | 6.0  |
| 17   | 15.0 | 13.7 | 10.4 | 7.9  | 15.0 | 13.7 | 9.2  | 6.2  | 0.6  | -0.1 | 4.8   | 4.8  |
| 18   | 6.1  | 7.5  | 9.6  | 11.2 | 4.8  | 3.9  | 3.1  | 4.3  | 3.8  | 6.4  | 9.0   | 10.3 |
| 19   | 8.2  | 8.2  | 6.7  | 8.7  | 7.6  | 8.0  | 3.8  | 1.8  | 3.0  | 1.8  | 5.5   | 8.5  |
| 20   | 10.0 | 6.9  | 4.4  | 2.7  | 0.5  | 2.8  | 4.0  | 2.7  | 10.0 | 6.3  | 1.8   | 0.4  |
| 21   | 0.8  | 2.1  | 4.8  | 4.6  | 0.7  | -1.8 | -2.7 | -0.7 | 0.2  | 1.0  | 4.0   | 4.6  |
| 22   | 3.4  | 8.2  | 8.5  | 10.3 | 3.3  | 7.7  | 8.0  | 9.0  | 0.9  | -2.9 | -3.0  | -5.1 |
| 23   | 11.2 | 9.4  | 6.3  | 2.8  | 9.3  | 8.4  | 5.8  | 2.8  | -6.2 | -4.2 | -2.4  | 0.3  |
| 24   | 3.9  | 7.1  | 9.0  | 7.6  | -0.2 | -2.1 | -2.3 | -0.3 | 3.9  | 6.7  | 8.7   | 7.6  |
| 25   | 5.3  | 9.6  | 12.7 | 12.9 | 4.2  | 9.5  | 12.4 | 12.7 | 3.3  | -0.8 | -2.4  | -2.1 |
| 26   | 12.2 | 18.0 | 20.3 | 14.5 | 10.8 | 16.4 | 20.2 | 13.3 | 5.8  | 7.4  | 1.3   | 5.8  |
| 27   | 16.4 | 19.5 | 21.8 | 10.8 | 14.4 | 19.4 | 16.9 | 10.3 | 7.8  | -0.8 | -13.8 | -3.4 |
| 28   | 11.6 | 10.4 | 7.2  | 6.3  | 11.5 | 10.3 | 6.6  | 5.4  | 1.5  | 1.8  | -3.0  | -3.1 |
| 29   | 4.5  | 6.0  | 8.5  | 9.3  | 3.3  | 1.9  | 2.1  | 3.6  | -3.0 | -5.7 | -8.3  | -8.5 |
| 30   | 7.1  | 4.9  | 5.2  | 5.6  | 2.9  | 2.0  | 2.3  | 4.6  | -6.5 | -4.5 | -4.6  | -3.2 |
| 31   | 9.2  | 12.2 | 12.4 | 9.9  | 8.4  | 11.2 | 11.2 | 9.1  | -3.7 | -4.7 | -5.3  | -3.8 |

Tab. 1. Zestawienie statystyk opisowych charakterystyk wiatru geostroficznego.  $Q_{10}$ ,  $Q_{25}$ , itd. – kwantyl 10%, 25% itd.,  $\eta$  – współczynnik stałości kierunku wiatru

Table 1. Statistics of geostrophic wind components.  $Q_{10}$ ,  $Q_{25}$ , etc. – quantiles 10%, 25% etc.,  $\eta$  – wind steadiness coefficient

|                                      | V           | u           | v          |
|--------------------------------------|-------------|-------------|------------|
| <b>Średnia (1971-2000)</b>           | <b>10,3</b> | <b>4,6</b>  | <b>1,7</b> |
| <b>Średnia (Average)</b>             | <b>9,5</b>  | <b>6,4</b>  | <b>0,7</b> |
| <b>Minimum</b>                       | 0,8         | -8,7        | -13,8      |
| <b><math>Q_{10}</math></b>           | 4,4         | -2,0        | -5,4       |
| <b><math>Q_{25}</math></b>           | 6,2         | 2,3         | -3,2       |
| <b><math>Q_{50}</math></b>           | 8,8         | 6,1         | 0,5        |
| <b><math>Q_{75}</math></b>           | 12,2        | 10,9        | 4,7        |
| <b><math>Q_{90}</math></b>           | 16,4        | 15,2        | 7,8        |
| <b>Maksimum</b>                      | 21,8        | 21,2        | 13,7       |
| <b><math>\eta</math></b>             |             | <b>0,68</b> |            |
| <b><math>\eta</math> (1971-2000)</b> |             | <b>0,48</b> |            |



Rys. 3. Przebieg prędkości (V) wiatru geostroficznego na tle charakterystyk miesięcznych z wielolecia (1971-2000): średnia (linia czarna przerywana), kwantyl 90% (linia czerwona przerywana)

Fig. 3. Course of geostrophic wind speed (V) with reference period (1971-2000) monthly statistics: average (black dotted line), quantile 90% (red dotted line)



Rys. 4. Przebieg wartości anomalii średnich miesięcznych składowych wiatru geostroficznego ( $u$ ,  $v$ ) oraz jego prędkości ( $V$ ) względem okresu referencyjnego (1971-2000);

kwantyl 10% - linia niebieska, kwantyl 90% - linia czerwona, trend liniowy – linia czarna

Fig. 4. Course of monthly averages of geostrophic wind components ( $u$ ,  $v$ ) and speed ( $V$ ) against reference period (1971-2000);

quantile 10% - blue line, quantile 90% - red line, linear fit – black line