

# Biuletyn Meteorologiczny Meteorological Bulletin

Wrocław - Biskupin

1958/5

Wydawca:

ZAKŁAD KLIMATOLOGII I OCHRONY ATMOSFERY  
INSTYTUT GEOGRAFII I ROZWOJU REGIONALNEGO  
UNIwersytet WROCLAWSKI

Published by:

DEPARTMENT OF CLIMATOLOGY AND ATMOSPHERE PROTECTION  
INSTITUTE OF GEOGRAPHY AND REGIONAL DEVELOPMENT  
UNIVERSITY OF WROCLAW



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Zakład Klimatologii i Ochrony Atmosfery  
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Uniwersytet Wrocławski  
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Położenie obserwatorium (observatory location)

Współrzędne geograficzne (coordinates): 15°30'44"E 50°27'47"N

Wysokość nad poziomem morza (altitude): 1364 m

Czas podawany w biuletynie jest czasem UTC.

UTC time is used in the bulletin.

| Parametr Parameter | Opis                                       | Description                           |
|--------------------|--------------------------------------------|---------------------------------------|
| D                  | Dzień                                      | Day                                   |
| T                  | Temperatura powietrza                      | Air temperature                       |
| Tmax               | Temperatura maksymalna                     | Maximum temperature                   |
| Tmin               | Temperatura minimalna                      | Minimum temperature                   |
| Tmin5              | Temperatura minimalna przy gruncie         | Minimum temperature near the ground   |
| U                  | Wilgotność względna                        | Relative humidity                     |
| e                  | Ciśnienie pary wodnej                      | Vapour pressure                       |
| P                  | Ciśnienie atmosferyczne na poziomie stacji | Atmospheric pressure at station level |
| V                  | Prędkość wiatru                            | Wind speed                            |
| $\alpha$           | Kierunek wiatru                            | Wind direction                        |
| R                  | Dobowa suma opadu                          | Precipitation                         |
| HS                 | Wysokość pokrywy śnieżnej                  | Snow depth                            |
| SD                 | Uśłonecznienie                             | Sunshine duration                     |
| PM2.5              | Stężenie pyłu zawieszonego PM2.5           | PM2.5 concentration                   |
| PM10               | Stężenie pyłu zawieszonego PM10            | PM10 concentration                    |
| O3                 | Stężenie ozonu                             | O3 concentration                      |
| NA                 | Brak danych                                | No data                               |
| m                  | Średnia dobowa                             | Daily mean                            |
| •                  | Zjawisko nie wystąpiło                     | Lack of phenomenon                    |

**Tabela 1. Temperatura powietrza (T), wilgotność względna (U) i ciśnienie atmosferyczne (P)****Table 1. Air temperature (T), relative humidity (U) and atmospheric pressure (P)**

| D  | T [°C] |      |      |      |      |      | U [%] |    |    |    | P [hPa] |        |        |        |
|----|--------|------|------|------|------|------|-------|----|----|----|---------|--------|--------|--------|
|    | 06     | 12   | 20   | Tm   | Tmax | Tmin | 06    | 12 | 20 | Um | 06      | 12     | 20     | Pm     |
| 1  | 10.3   | 18.0 | 13.9 | 14.0 | 19.7 | 6.6  | 84    | 40 | 64 | 63 | 1014.7  | 1014.0 | 1012.8 | 1013.8 |
| 2  | 10.6   | 18.9 | 15.5 | 15.1 | 20.5 | 5.8  | 76    | 40 | 58 | 58 | 1012.0  | 1009.7 | 1003.2 | 1008.3 |
| 3  | 11.9   | 13.1 | 8.3  | 10.4 | 15.6 | 7.7  | 83    | 38 | 52 | 58 | 999.2   | 999.9  | 1001.3 | 1000.1 |
| 4  | 5.8    | 7.8  | 4.8  | 5.8  | 10.2 | 2.6  | 62    | 60 | 83 | 68 | 999.9   | 1001.6 | 1005.7 | 1002.4 |
| 5  | 7.4    | 14.3 | 9.1  | 10.0 | 17.1 | 3.7  | 61    | 36 | 70 | 56 | 1006.3  | 1004.0 | 999.5  | 1003.3 |
| 6  | 12.9   | 16.1 | 12.2 | 13.4 | 17.7 | 6.9  | 83    | 70 | 89 | 81 | 996.3   | 996.7  | 995.9  | 996.3  |
| 7  | 12.1   | 16.0 | 12.6 | 13.3 | 17.1 | 10.9 | 91    | 41 | 63 | 65 | 996.4   | 1001.1 | 1003.6 | 1000.4 |
| 8  | 11.5   | 14.5 | 14.3 | 13.7 | 19.7 | 7.3  | 66    | 75 | 88 | 76 | 1005.2  | 1005.2 | 1003.5 | 1004.6 |
| 9  | 15.9   | 24.0 | 16.2 | 18.1 | 24.9 | 13.2 | 89    | 55 | 88 | 77 | 1002.4  | 1003.6 | 1002.0 | 1002.7 |
| 10 | 16.3   | 20.3 | 18.1 | 18.2 | 22.9 | 12.7 | 91    | 71 | 82 | 81 | 998.9   | 999.6  | 1000.3 | 999.6  |
| 11 | 17.1   | 26.6 | 21.5 | 21.7 | 27.1 | 12.6 | 84    | 42 | 65 | 64 | 998.3   | 997.3  | 997.2  | 997.6  |
| 12 | 13.4   | 18.5 | 14.5 | 15.2 | 21.5 | 13.1 | 94    | 73 | 91 | 86 | 1001.1  | 999.3  | 998.0  | 999.5  |
| 13 | 12.2   | 16.9 | 11.7 | 13.1 | 18.7 | 11.3 | 75    | 45 | 78 | 66 | 1003.3  | 1005.7 | 1006.0 | 1005.0 |
| 14 | 11.4   | 19.3 | 16.6 | 16.0 | 22.8 | 10.1 | 83    | 56 | 80 | 73 | 1004.5  | 1000.9 | 996.7  | 1000.7 |
| 15 | 17.2   | 23.4 | 14.0 | 17.2 | 24.3 | 13.4 | 83    | 51 | 97 | 77 | 988.8   | 990.4  | 991.9  | 990.4  |
| 16 | 13.4   | 18.2 | 15.7 | 15.8 | 21.7 | 10.5 | 96    | 70 | 90 | 85 | 989.9   | 984.8  | 981.7  | 985.5  |
| 17 | 11.2   | 13.7 | 8.5  | 10.5 | 16.0 | 8.5  | 82    | 69 | 62 | 71 | 991.2   | 997.6  | 1004.1 | 997.6  |
| 18 | 9.7    | 16.9 | 13.7 | 13.5 | 17.6 | 6.1  | 74    | 56 | 72 | 67 | 1003.1  | 1002.4 | 1002.0 | 1002.5 |
| 19 | 12.6   | 16.9 | 10.4 | 12.6 | 18.5 | 10.4 | 73    | 49 | 86 | 69 | 1005.1  | 1007.1 | 1007.3 | 1006.5 |
| 20 | 11.6   | 21.2 | 11.8 | 14.1 | 23.3 | 5.2  | 81    | 39 | 86 | 69 | 1007.2  | 1004.8 | 1000.4 | 1004.1 |
| 21 | 17.4   | 28.4 | 21.1 | 22.0 | 29.1 | 9.4  | 73    | 32 | 61 | 55 | 997.7   | 997.2  | 997.9  | 997.6  |
| 22 | 9.8    | 13.7 | 12.2 | 12.0 | 20.2 | 9.4  | 94    | 68 | 87 | 83 | 1007.6  | 1008.1 | 1004.8 | 1006.8 |
| 23 | 12.8   | 18.0 | 13.6 | 14.5 | 20.2 | 11.1 | 89    | 81 | 94 | 88 | 1000.8  | 999.2  | 999.7  | 999.9  |
| 24 | 15.3   | 23.4 | 17.1 | 18.2 | 24.9 | 11.5 | 83    | 52 | 82 | 72 | 1001.2  | 1000.7 | 999.7  | 1000.5 |
| 25 | 17.4   | 28.5 | 20.7 | 21.8 | 29.6 | 11.0 | 86    | 40 | 62 | 63 | 1001.2  | 1000.7 | 1000.0 | 1000.6 |
| 26 | 20.2   | 29.2 | 17.8 | 21.3 | 30.4 | 12.8 | 72    | 42 | 96 | 70 | 998.3   | 997.6  | 1000.7 | 998.9  |
| 27 | 17.9   | 26.3 | 20.9 | 21.5 | 28.6 | 14.1 | 90    | 61 | 85 | 79 | 1004.3  | 1002.4 | 998.7  | 1001.8 |
| 28 | 18.5   | 26.7 | 12.4 | 17.5 | 29.3 | 12.4 | 91    | 63 | 94 | 83 | 995.1   | 994.9  | 1002.8 | 997.6  |
| 29 | 11.4   | 15.8 | 10.4 | 12.0 | 17.2 | 10.4 | 89    | 63 | 96 | 83 | 1008.0  | 1008.8 | 1007.7 | 1008.2 |
| 30 | 12.2   | 16.6 | 14.5 | 14.5 | 18.0 | 7.7  | 89    | 70 | 85 | 81 | 1006.4  | 1004.3 | 1001.6 | 1004.1 |
| 31 | 13.6   | 17.8 | 14.6 | 15.2 | 20.4 | 13.3 | 98    | 82 | 88 | 89 | 999.2   | 999.9  | 1002.0 | 1000.4 |

**Tabela 2. Prędkość (V) i kierunek ( $\alpha$ ) wiatru, dobową sumą opadu (R) i wysokość pokrywy śnieżnej (HS)****Table 2. Wind speed (V) and direction ( $\alpha$ ), daily sum of precipitation (R) and snow cover depth (HS)**

| D  | V [m/s] |    |    |     |      |    | $\alpha$ [1-32] |    |    | R[mm] |
|----|---------|----|----|-----|------|----|-----------------|----|----|-------|
|    | 06      | 12 | 18 | Vm  | Vmax | Vh | 06              | 12 | 18 |       |
| 1  | 2       | 5  | 2  | 3.0 | 3.0  | 3  | 26              | 28 | 28 | 0.0   |
| 2  | 2       | 2  | 0  | 1.3 | 1.3  | 1  | 28              | 26 | 0  | 0.7   |
| 3  | 5       | 6  | 2  | 4.3 | 4.3  | 4  | 24              | 24 | 28 | 0.0   |
| 4  | 6       | 7  | 0  | 4.3 | 4.3  | 4  | 24              | 28 | 0  | 0.0   |
| 5  | 3       | 3  | 1  | 2.3 | 2.3  | 2  | 22              | 26 | 12 | 0.0   |
| 6  | 3       | 3  | 2  | 2.7 | 2.7  | 3  | 24              | 26 | 20 | 10.4  |
| 7  | 5       | 6  | 2  | 4.3 | 4.3  | 4  | 26              | 28 | 24 | •     |
| 8  | 0       | 1  | 2  | 1.0 | 1.0  | 1  | 0               | 2  | 14 | 1.8   |
| 9  | 1       | 3  | 0  | 1.3 | 1.3  | 1  | 20              | 24 | 0  | 2.2   |
| 10 | 2       | 5  | 0  | 2.3 | 2.3  | 2  | 18              | 24 | 0  | 0.0   |
| 11 | 0       | 6  | 0  | 2.0 | 2.0  | 2  | 0               | 22 | 0  | 1.1   |
| 12 | 1       | 2  | 0  | 1.0 | 1.0  | 1  | 2               | 2  | 0  | 0.0   |
| 13 | 5       | 5  | 0  | 3.3 | 3.3  | 3  | 26              | 26 | 0  | 0.0   |
| 14 | 2       | 3  | 4  | 3.0 | 3.0  | 3  | 12              | 12 | 8  | •     |
| 15 | 0       | 4  | 2  | 2.0 | 2.0  | 2  | 0               | 26 | 26 | 15.3  |
| 16 | 0       | 3  | 2  | 1.7 | 1.7  | 2  | 0               | 12 | 4  | 1.0   |
| 17 | 6       | 6  | 3  | 5.0 | 5.0  | 5  | 26              | 24 | 22 | •     |
| 18 | 3       | 6  | 6  | 5.0 | 5.0  | 5  | 20              | 22 | 24 | •     |
| 19 | 4       | 4  | 0  | 2.7 | 2.7  | 3  | 24              | 24 | 0  | •     |
| 20 | 0       | 5  | 0  | 1.7 | 1.7  | 2  | 0               | 14 | 0  | •     |
| 21 | 2       | 4  | 5  | 3.7 | 3.7  | 4  | 16              | 18 | 28 | 1.7   |
| 22 | 2       | 2  | 1  | 1.7 | 1.7  | 2  | 28              | 6  | 8  | 0.0   |
| 23 | 2       | 0  | 0  | 0.7 | 0.7  | 1  | 8               | 0  | 0  | •     |
| 24 | 0       | 2  | 2  | 1.3 | 1.3  | 1  | 0               | 6  | 8  | •     |
| 25 | 3       | 2  | 3  | 2.7 | 2.7  | 3  | 8               | 12 | 8  | •     |
| 26 | 2       | 4  | 0  | 2.0 | 2.0  | 2  | 10              | 14 | 0  | 11.7  |
| 27 | 2       | 3  | 3  | 2.7 | 2.7  | 3  | 28              | 8  | 32 | •     |
| 28 | 1       | 1  | 5  | 2.3 | 2.3  | 2  | 14              | 16 | 28 | 26.8  |
| 29 | 3       | 3  | 0  | 2.0 | 2.0  | 2  | 28              | 2  | 0  | •     |
| 30 | 4       | 5  | 2  | 3.7 | 3.7  | 4  | 6               | 8  | 8  | 5.2   |
| 31 | 2       | 3  | 4  | 3.0 | 3.0  | 3  | 8               | 24 | 24 | 3.1   |

**Tabela 3. Liczba dni charakterystycznych w bieżącym miesiącu oraz średnia liczba dni charakterystycznych dla tego miesiąca w wieloleciu 1946-2011 oraz 1971-2000****Table 3. Number of days with threshold value in current month and monthly average number of days with threshold value in the 1946-2011 and 1971-2000 period**

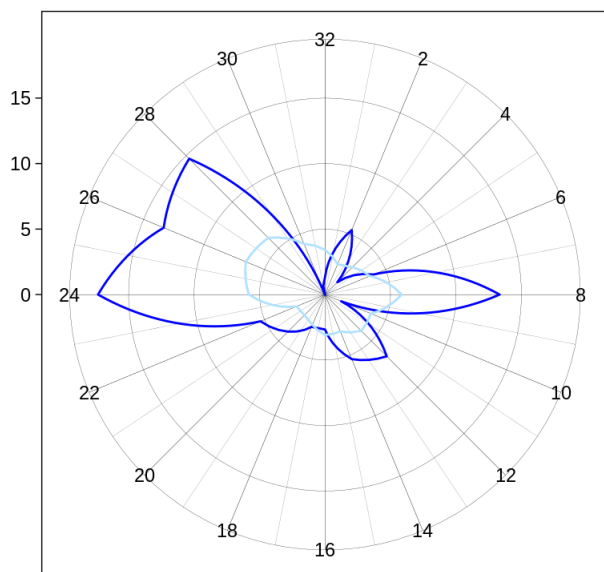
| Nazwa / Name                 | 1946-2011 | 1971-2000 | 1958-V |
|------------------------------|-----------|-----------|--------|
| Przymrozkowe (Tmin < 0°C)    | 1         | 1         | 0      |
| Mroźne (Tmax < 0°C)          | 0         | 0         | 0      |
| Bardzo mroźne (Tmin < -10°C) | 0         | 0         | 0      |
| Ciepłe (Tmax > 20°C)         | 15        | 15        | 18     |
| Gorące (Tmax > 25°C)         | 5         | 5         | 6      |
| Upalne (Tmax > 30°C)         | 0         | 0         | 1      |
| R > 1 mm                     | 9         | 8         | 10     |
| R > 10 mm                    | 2         | 1         | 4      |

**Tabela 4. Wartości średnie i ekstrema miesięczne na tle charakterystyk miesięcznych dla wielolecia 1946-2011 i 1971-2000****Table 4. Average and extreme monthly values vs. average monthly characteristics for the 1946-2011 and 1971-2000 period**

|            | Opis                      | Description                 | 1946-2011           | 1971-2000           | 1958-V              |
|------------|---------------------------|-----------------------------|---------------------|---------------------|---------------------|
| T<br>[°C]  | Średnia miesięczna        | Monthly average             | 13.7                | 13.8                | 15.2                |
|            | Średnia maksymalna        | Average maximum temperature | 19.8                | 20.0                | 21.4                |
|            | Średnia minimalna         | Average minimum temperature | 7.8                 | 7.8                 | 9.7                 |
|            | Maksymalna średnia dobową | Maximum daily temperature   | 24.5 (1950-05-22)   | 23.5 (1979-05-31)   | 22.0 (1958-05-21)   |
|            | Absolutne maksimum        | Absolute maximum            | 32.9 (2005-05-30)   | 31.6 (1979-05-31)   | 30.4 (1958-05-26)   |
|            | Minimalna średnia dobową  | Maximum daily temperature   | 1.4 (1950-05-22)    | 1.8 (1979-05-31)    | 5.8 (1958-05-21)    |
|            | Absolutne minimum         | Absolute minimum            | -2.9 (1980-05-05)   | -2.9 (1980-05-05)   | 2.6 (1958-05-04)    |
| P<br>[hPa] | Średnia miesięczna        | Monthly average             | 1000.8              | 1000.6              | 1001.2              |
|            | Maksimum                  | Maximum                     | 1019.0 (1990-05-02) | 1019.0 (1990-05-02) | 1013.8 (1958-05-01) |
|            | Minimum                   | Minimum                     | 976.6 (1995-05-13)  | 976.6 (1995-05-13)  | 985.5 (1958-05-16)  |
| V<br>[m/s] | Średnia miesięczna        | Monthly average             | 2.1                 | 2.1                 | 2.6                 |
|            | Średnie maksimum          | Average maximum             | 5.6                 | 7.5                 | 2.6                 |
|            | Absolutne maksimum        | Absolute maximum            | 19.0 (1987-05-10)   | 19.0 (1987-05-10)   | 5.0 (1958-05-17)    |
| R<br>[mm]  | Suma miesięczna           | Monthly sum                 | 42.8                | 38.2                | 70.8                |
|            | Maksymalna suma dobową    | Maximum daily sum           | 42.7 (1983-05-02)   | 42.7 (1983-05-02)   | 26.8 (1958-05-28)   |

(a) Wind direction frequency [%]

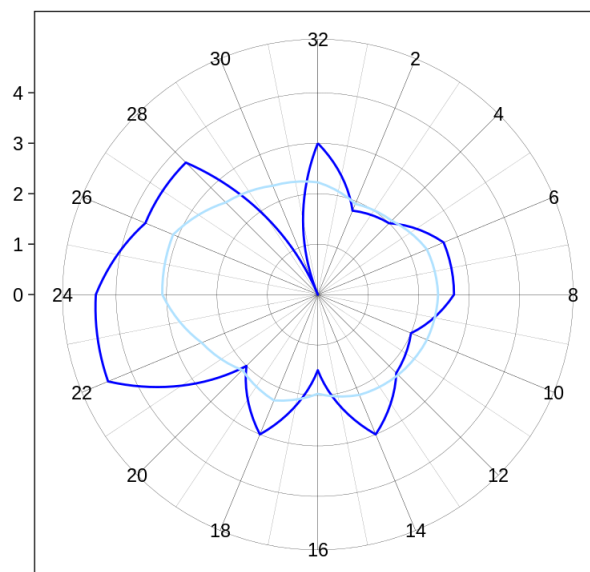
Calm: current NA % 1946-2011 11.3 %



— May 1946-2011 — May 1958

(b) Wind velocity [m/s]

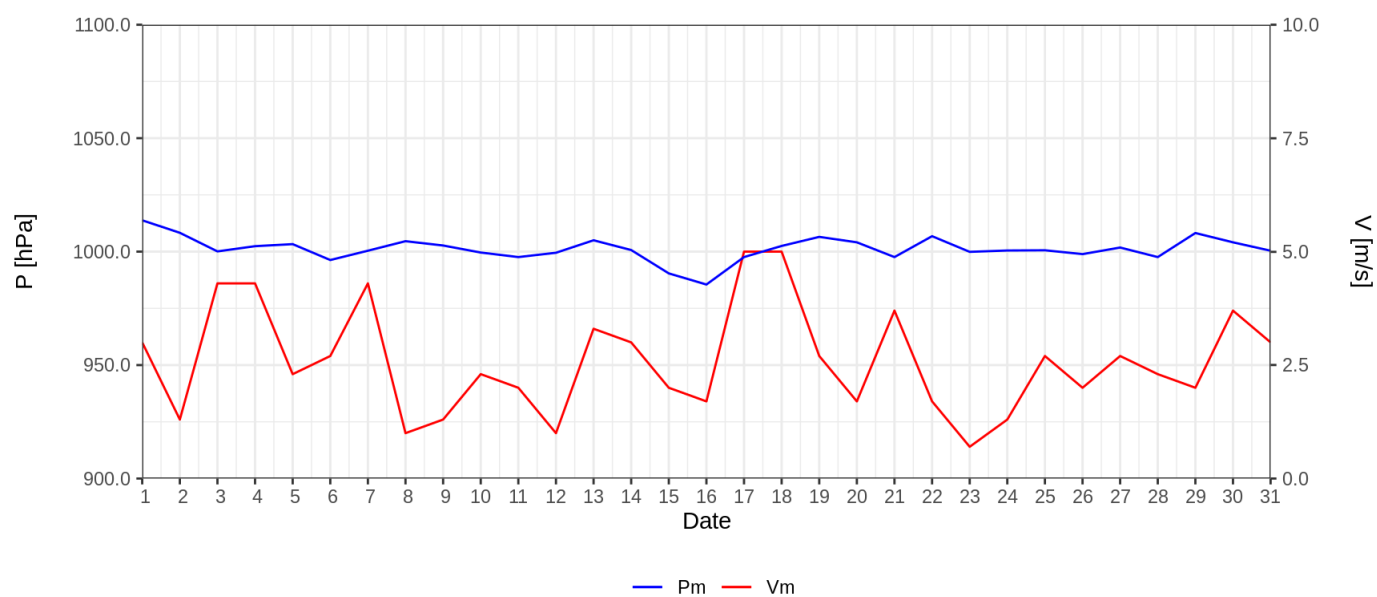
Calm: current NA % 1946-2011 11.3 %



— May 1946-2011 — May 1958

Ryc. 1. Częstość (a) i prędkość (b) wiatru w kierunkach

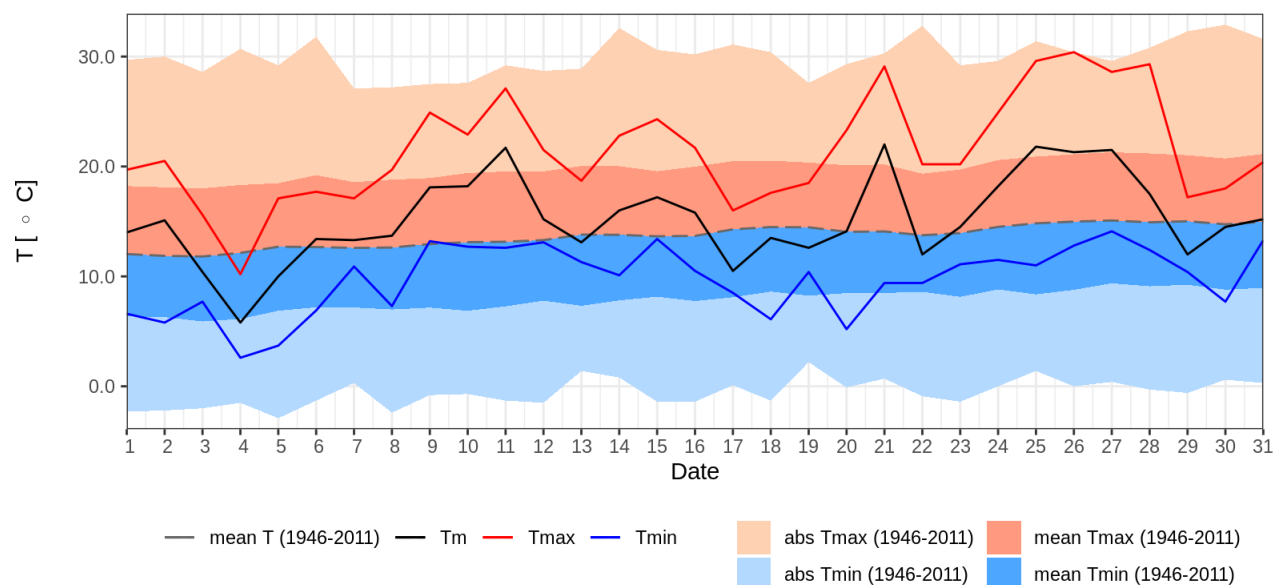
Fig. 1. Wind direction frequency (a) and wind velocity (b) for a given wind direction



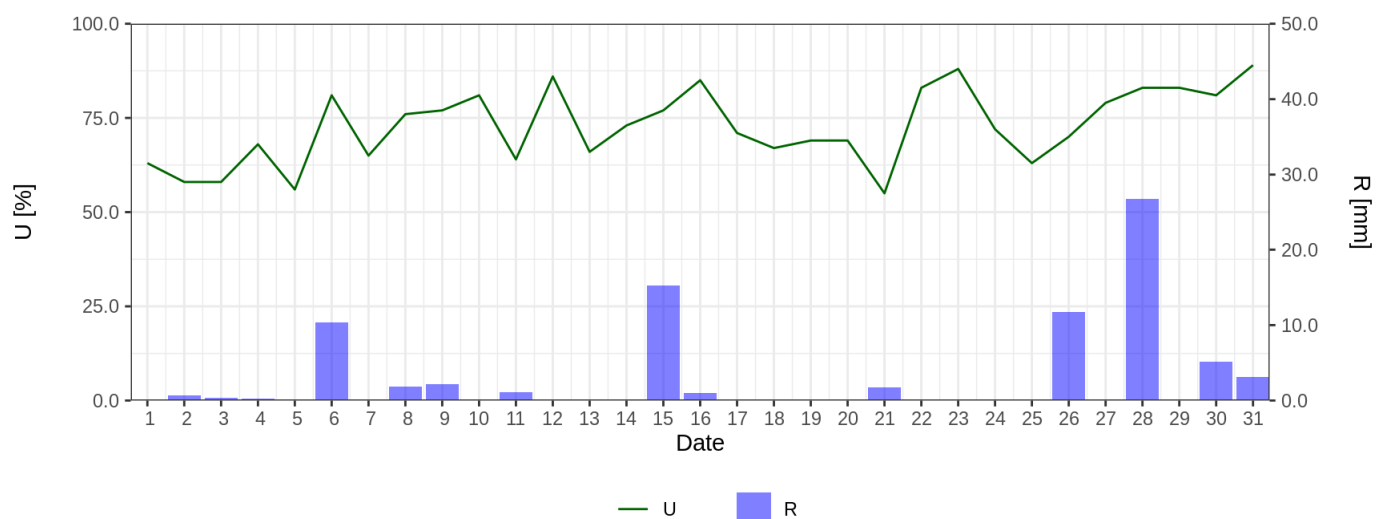
— Pm — Vm

Ryc. 1. Średnie dobowe ciśnienie atmosferyczne

Fig. 1. Daily average air pressure



Ryc. 2. Średnia dobowa, minimalna i maksymalna temperatura powietrza dla miesiąca na tle danych z wielolecia 1946-2011  
 Fig. 2. Daily mean, maximum and minimum air temperature for given month and 1946-2011 period



Ryc. 3. Średnia dobowa wilgotność względna powietrza i dobowe sumy opadu atmosferycznego  
 Fig. 3. Mean daily relative humidity and daily sum of precipitation