



Statistiques des précipitations extrêmes des communes belges

Aiseau-Presles (INS 52074)

1. Niveau de retour estimé pour une durée de précipitations de 10 minutes à 30 jours (lignes) et une période de retour de 2 à 200 années (colonnes). Unités : mm.

| Durée | Période de retour (années) | | | | | | | | | | | |
|--------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 2 | 5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 75 | 100 | 200 |
| 10 min | 7.6 | 10.9 | 13.4 | 14.9 | 16.0 | 16.9 | 17.6 | 18.8 | 19.8 | 21.6 | 23.0 | 26.5 |
| 20 min | 10.9 | 15.7 | 19.3 | 21.4 | 23.0 | 24.3 | 25.4 | 27.1 | 28.5 | 31.1 | 33.0 | 37.9 |
| 30 min | 12.9 | 18.8 | 23.2 | 25.8 | 27.8 | 29.3 | 30.6 | 32.7 | 34.4 | 37.6 | 40.0 | 46.0 |
| 1 h | 16.0 | 22.4 | 27.2 | 30.1 | 32.2 | 33.9 | 35.3 | 37.6 | 39.5 | 42.9 | 45.5 | 52.0 |
| 2 h | 19.2 | 26.4 | 31.8 | 35.1 | 37.5 | 39.3 | 40.9 | 43.5 | 45.5 | 49.4 | 52.2 | 59.5 |
| 3 h | 21.3 | 29.3 | 35.2 | 38.8 | 41.4 | 43.5 | 45.3 | 48.1 | 50.3 | 54.6 | 57.7 | 65.6 |
| 6 h | 25.7 | 34.0 | 40.1 | 43.8 | 46.5 | 48.6 | 50.4 | 53.3 | 55.6 | 60.0 | 63.1 | 71.3 |
| 12 h | 31.3 | 41.2 | 48.5 | 53.0 | 56.2 | 58.7 | 60.9 | 64.3 | 67.0 | 72.2 | 76.0 | 85.6 |
| 1 j | 38.3 | 49.8 | 58.0 | 62.9 | 66.4 | 69.2 | 71.5 | 75.2 | 78.1 | 83.6 | 87.5 | 97.6 |
| 2 j | 48.5 | 62.2 | 71.7 | 77.3 | 81.4 | 84.5 | 87.1 | 91.2 | 94.5 | 100.5 | 104.8 | 115.6 |
| 3 j | 51.6 | 66.0 | 76.1 | 81.9 | 86.0 | 89.3 | 91.9 | 96.2 | 99.5 | 105.5 | 109.9 | 120.7 |
| 4 j | 56.0 | 71.4 | 82.0 | 88.1 | 92.4 | 95.8 | 98.6 | 102.9 | 106.4 | 112.6 | 117.1 | 128.1 |
| 5 j | 63.6 | 80.2 | 91.5 | 98.1 | 102.7 | 106.2 | 109.2 | 113.8 | 117.4 | 124.0 | 128.7 | 140.2 |
| 7 j | 73.1 | 91.2 | 103.4 | 110.3 | 115.1 | 118.9 | 122.0 | 126.8 | 130.6 | 137.5 | 142.4 | 154.2 |
| 10 j | 87.0 | 107.3 | 120.7 | 128.4 | 133.7 | 137.8 | 141.2 | 146.4 | 150.5 | 157.9 | 163.1 | 175.7 |
| 15 j | 105.4 | 129.0 | 144.5 | 153.2 | 159.3 | 163.9 | 167.7 | 173.6 | 178.2 | 186.4 | 192.2 | 206.0 |
| 20 j | 122.7 | 150.3 | 168.2 | 178.1 | 185.0 | 190.3 | 194.6 | 201.3 | 206.5 | 215.7 | 222.2 | 237.7 |
| 25 j | 130.7 | 160.1 | 178.9 | 189.4 | 196.6 | 202.2 | 206.6 | 213.6 | 219.0 | 228.6 | 235.3 | 251.2 |
| 30 j | 152.9 | 184.5 | 204.6 | 215.7 | 223.4 | 229.3 | 234.0 | 241.4 | 247.0 | 257.1 | 264.1 | 280.8 |

2. Niveau de retour estimé et écart-type de l'estimation pour une durée de précipitations de 10 minutes à 30 jours (lignes) et une période de retour de 2 à 200 années (colonnes). Unités : mm.

| Durée | Période de retour (années) | | | | | | | | | | | |
|--------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 2 | 5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 75 | 100 | 200 |
| 10 min | 7.6 | 10.9 | 13.4 | 14.9 | 16.0 | 16.9 | 17.6 | 18.8 | 19.8 | 21.6 | 23.0 | 26.5 |
| | 0.2 | 0.3 | 0.5 | 0.7 | 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 1.7 | 1.9 | 2.7 |
| 20 min | 10.9 | 15.7 | 19.3 | 21.4 | 23.0 | 24.3 | 25.4 | 27.1 | 28.5 | 31.1 | 33.0 | 37.9 |
| | 0.3 | 0.5 | 0.8 | 1.0 | 1.1 | 1.3 | 1.4 | 1.7 | 1.9 | 2.3 | 2.6 | 3.6 |
| 30 min | 12.9 | 18.8 | 23.2 | 25.8 | 27.8 | 29.3 | 30.6 | 32.7 | 34.4 | 37.6 | 40.0 | 46.0 |
| | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.3 | 1.4 | 1.6 | 1.8 | 2.2 | 2.5 | 3.3 |
| 1 h | 16.0 | 22.4 | 27.2 | 30.1 | 32.2 | 33.9 | 35.3 | 37.6 | 39.5 | 42.9 | 45.5 | 52.0 |
| | 0.5 | 0.7 | 1.1 | 1.3 | 1.5 | 1.7 | 1.9 | 2.2 | 2.5 | 3.0 | 3.4 | 4.6 |
| 2 h | 19.2 | 26.4 | 31.8 | 35.1 | 37.5 | 39.3 | 40.9 | 43.5 | 45.5 | 49.4 | 52.2 | 59.5 |
| | 0.6 | 0.9 | 1.3 | 1.5 | 1.8 | 2.0 | 2.2 | 2.5 | 2.8 | 3.4 | 3.8 | 5.2 |
| 3 h | 21.3 | 29.3 | 35.2 | 38.8 | 41.4 | 43.5 | 45.3 | 48.1 | 50.3 | 54.6 | 57.7 | 65.6 |
| | 0.7 | 1.0 | 1.3 | 1.6 | 1.8 | 2.0 | 2.1 | 2.4 | 2.7 | 3.2 | 3.6 | 4.8 |
| 6 h | 25.7 | 34.0 | 40.1 | 43.8 | 46.5 | 48.6 | 50.4 | 53.3 | 55.6 | 60.0 | 63.1 | 71.3 |
| | 0.8 | 1.0 | 1.4 | 1.7 | 2.0 | 2.3 | 2.5 | 2.9 | 3.3 | 4.0 | 4.6 | 6.3 |
| 12 h | 31.3 | 41.2 | 48.5 | 53.0 | 56.2 | 58.7 | 60.9 | 64.3 | 67.0 | 72.2 | 76.0 | 85.6 |
| | 1.1 | 1.4 | 1.9 | 2.3 | 2.7 | 3.0 | 3.3 | 3.9 | 4.3 | 5.3 | 6.0 | 8.3 |
| 1 j | 38.3 | 49.8 | 58.0 | 62.9 | 66.4 | 69.2 | 71.5 | 75.2 | 78.1 | 83.6 | 87.5 | 97.6 |
| | 1.2 | 1.5 | 1.8 | 2.0 | 2.2 | 2.4 | 2.6 | 2.9 | 3.1 | 3.6 | 4.0 | 5.1 |
| 2 j | 48.5 | 62.2 | 71.7 | 77.3 | 81.4 | 84.5 | 87.1 | 91.2 | 94.5 | 100.5 | 104.8 | 115.6 |
| | 1.8 | 2.4 | 3.0 | 3.5 | 3.9 | 4.2 | 4.5 | 5.1 | 5.5 | 6.3 | 7.0 | 8.8 |
| 3 j | 51.6 | 66.0 | 76.1 | 81.9 | 86.0 | 89.3 | 91.9 | 96.2 | 99.5 | 105.5 | 109.9 | 120.7 |
| | 2.3 | 2.9 | 3.6 | 4.1 | 4.5 | 4.9 | 5.2 | 5.7 | 6.1 | 6.9 | 7.6 | 9.3 |
| 4 j | 56.0 | 71.4 | 82.0 | 88.1 | 92.4 | 95.8 | 98.6 | 102.9 | 106.4 | 112.6 | 117.1 | 128.1 |
| | 2.6 | 3.2 | 3.8 | 4.2 | 4.6 | 4.8 | 5.1 | 5.5 | 5.8 | 6.5 | 7.0 | 8.4 |
| 5 j | 63.6 | 80.2 | 91.5 | 98.1 | 102.7 | 106.2 | 109.2 | 113.8 | 117.4 | 124.0 | 128.7 | 140.2 |
| | 3.0 | 3.7 | 4.3 | 4.7 | 5.0 | 5.3 | 5.5 | 5.9 | 6.2 | 6.8 | 7.3 | 8.6 |
| 7 j | 73.1 | 91.2 | 103.4 | 110.3 | 115.1 | 118.9 | 122.0 | 126.8 | 130.6 | 137.5 | 142.4 | 154.2 |
| | 3.6 | 4.3 | 4.9 | 5.2 | 5.5 | 5.7 | 5.9 | 6.3 | 6.5 | 7.1 | 7.5 | 8.6 |
| 10 j | 87.0 | 107.3 | 120.7 | 128.4 | 133.7 | 137.8 | 141.2 | 146.4 | 150.5 | 157.9 | 163.1 | 175.7 |
| | 4.5 | 5.6 | 6.3 | 6.8 | 7.1 | 7.4 | 7.7 | 8.1 | 8.4 | 9.0 | 9.5 | 10.8 |
| 15 j | 105.4 | 129.0 | 144.5 | 153.2 | 159.3 | 163.9 | 167.7 | 173.6 | 178.2 | 186.4 | 192.2 | 206.0 |
| | 5.6 | 6.7 | 7.5 | 8.0 | 8.3 | 8.5 | 8.7 | 9.0 | 9.3 | 9.7 | 10.1 | 11.0 |
| 20 j | 122.7 | 150.3 | 168.2 | 178.1 | 185.0 | 190.3 | 194.6 | 201.3 | 206.5 | 215.7 | 222.2 | 237.7 |
| | 6.6 | 8.0 | 9.0 | 9.5 | 9.9 | 10.2 | 10.5 | 10.9 | 11.2 | 11.8 | 12.3 | 13.4 |
| 25 j | 130.7 | 160.1 | 178.9 | 189.4 | 196.6 | 202.2 | 206.6 | 213.6 | 219.0 | 228.6 | 235.3 | 251.2 |
| | 7.3 | 9.0 | 10.2 | 10.9 | 11.5 | 11.9 | 12.3 | 12.9 | 13.4 | 14.3 | 15.0 | 16.8 |
| 30 j | 152.9 | 184.5 | 204.6 | 215.7 | 223.4 | 229.3 | 234.0 | 241.4 | 247.0 | 257.1 | 264.1 | 280.8 |
| | 8.1 | 9.8 | 11.2 | 12.1 | 12.8 | 13.3 | 13.8 | 14.6 | 15.2 | 16.4 | 17.4 | 19.8 |

3. Intervalle de confiance à 95% de la période de retour estimée pour une durée de précipitations de 10 minutes à 30 jours (lignes) et une période de retour de 2 à 200 années (colonnes). Unités : mm.

| Durée | Période de retour (années) | | | | | | | | | | | |
|--------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 2 | 5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 75 | 100 | 200 |
| 10 min | 7.2 | 10.2 | 12.3 | 13.6 | 14.4 | 15.1 | 15.6 | 16.5 | 17.1 | 18.3 | 19.2 | 21.2 |
| | 8.0 | 11.6 | 14.4 | 16.2 | 17.6 | 18.7 | 19.6 | 21.2 | 22.5 | 24.9 | 26.8 | 31.7 |
| 20 min | 10.3 | 14.6 | 17.7 | 19.5 | 20.8 | 21.8 | 22.6 | 23.8 | 24.8 | 26.6 | 27.9 | 30.9 |
| | 11.6 | 16.7 | 20.8 | 23.3 | 25.3 | 26.8 | 28.2 | 30.3 | 32.1 | 35.5 | 38.1 | 45.0 |
| 30 min | 12.1 | 17.6 | 21.5 | 23.8 | 25.4 | 26.7 | 27.8 | 29.5 | 30.9 | 33.4 | 35.2 | 39.6 |
| | 13.7 | 20.0 | 24.8 | 27.8 | 30.1 | 31.9 | 33.5 | 36.0 | 38.0 | 41.9 | 44.8 | 52.4 |
| 1 h | 15.1 | 21.0 | 25.1 | 27.5 | 29.2 | 30.5 | 31.6 | 33.3 | 34.6 | 37.1 | 38.8 | 43.0 |
| | 16.9 | 23.9 | 29.3 | 32.7 | 35.3 | 37.3 | 39.1 | 41.9 | 44.3 | 48.7 | 52.1 | 60.9 |
| 2 h | 18.1 | 24.7 | 29.4 | 32.1 | 34.0 | 35.5 | 36.7 | 38.6 | 40.1 | 42.8 | 44.7 | 49.4 |
| | 20.3 | 28.2 | 34.3 | 38.1 | 40.9 | 43.2 | 45.2 | 48.4 | 51.0 | 56.0 | 59.7 | 69.6 |
| 3 h | 20.0 | 27.4 | 32.7 | 35.7 | 37.9 | 39.6 | 41.0 | 43.3 | 45.0 | 48.2 | 50.5 | 56.2 |
| | 22.6 | 31.2 | 37.8 | 41.9 | 44.9 | 47.4 | 49.5 | 52.9 | 55.6 | 60.9 | 64.8 | 75.1 |
| 6 h | 24.2 | 32.0 | 37.4 | 40.4 | 42.6 | 44.2 | 45.5 | 47.6 | 49.2 | 52.1 | 54.1 | 58.9 |
| | 27.2 | 36.0 | 42.8 | 47.2 | 50.4 | 53.1 | 55.3 | 59.0 | 62.0 | 67.8 | 72.2 | 83.6 |
| 12 h | 29.2 | 38.4 | 44.8 | 48.4 | 50.9 | 52.8 | 54.3 | 56.7 | 58.6 | 61.8 | 64.1 | 69.4 |
| | 33.4 | 44.0 | 52.3 | 57.5 | 61.5 | 64.7 | 67.4 | 71.9 | 75.5 | 82.5 | 87.8 | 101.8 |
| 1 j | 36.0 | 46.9 | 54.5 | 58.9 | 62.0 | 64.5 | 66.4 | 69.6 | 72.0 | 76.5 | 79.8 | 87.6 |
| | 40.7 | 52.6 | 61.5 | 66.8 | 70.8 | 73.9 | 76.5 | 80.8 | 84.2 | 90.6 | 95.3 | 107.5 |
| 2 j | 44.9 | 57.4 | 65.8 | 70.4 | 73.7 | 76.2 | 78.2 | 81.3 | 83.7 | 88.1 | 91.1 | 98.3 |
| | 52.1 | 66.9 | 77.7 | 84.2 | 89.0 | 92.8 | 96.0 | 101.1 | 105.2 | 112.9 | 118.6 | 132.9 |
| 3 j | 47.1 | 60.3 | 69.0 | 73.8 | 77.2 | 79.7 | 81.8 | 85.0 | 87.5 | 92.0 | 95.1 | 102.5 |
| | 56.0 | 71.8 | 83.2 | 90.0 | 94.9 | 98.8 | 102.1 | 107.3 | 111.4 | 119.1 | 124.7 | 138.9 |
| 4 j | 50.9 | 65.1 | 74.5 | 79.8 | 83.5 | 86.4 | 88.6 | 92.2 | 95.0 | 99.9 | 103.4 | 111.6 |
| | 61.1 | 77.8 | 89.5 | 96.4 | 101.4 | 105.3 | 108.5 | 113.7 | 117.7 | 125.3 | 130.8 | 144.6 |
| 5 j | 57.7 | 72.9 | 83.1 | 88.9 | 92.9 | 95.9 | 98.4 | 102.3 | 105.3 | 110.6 | 114.4 | 123.3 |
| | 69.5 | 87.5 | 100.0 | 107.2 | 112.4 | 116.5 | 119.9 | 125.3 | 129.5 | 137.3 | 142.9 | 157.0 |
| 7 j | 66.1 | 82.7 | 93.8 | 100.0 | 104.3 | 107.7 | 110.4 | 114.6 | 117.8 | 123.6 | 127.7 | 137.3 |
| | 80.2 | 99.7 | 112.9 | 120.5 | 125.9 | 130.2 | 133.6 | 139.1 | 143.4 | 151.4 | 157.1 | 171.1 |
| 10 j | 78.1 | 96.4 | 108.3 | 115.0 | 119.7 | 123.2 | 126.1 | 130.6 | 134.1 | 140.2 | 144.5 | 154.7 |
| | 95.8 | 118.2 | 133.2 | 141.7 | 147.7 | 152.4 | 156.2 | 162.2 | 166.9 | 175.6 | 181.7 | 196.8 |
| 15 j | 94.5 | 115.8 | 129.8 | 137.6 | 143.1 | 147.2 | 150.6 | 155.9 | 160.0 | 167.3 | 172.4 | 184.5 |
| | 116.2 | 142.2 | 159.3 | 168.8 | 175.5 | 180.6 | 184.7 | 191.3 | 196.3 | 205.5 | 211.9 | 227.5 |
| 20 j | 109.9 | 134.6 | 150.6 | 159.5 | 165.6 | 170.3 | 174.1 | 180.0 | 184.5 | 192.6 | 198.2 | 211.4 |
| | 135.6 | 166.0 | 185.8 | 196.8 | 204.5 | 210.4 | 215.2 | 222.6 | 228.4 | 238.9 | 246.2 | 264.0 |
| 25 j | 116.4 | 142.5 | 159.0 | 168.0 | 174.2 | 178.9 | 182.6 | 188.4 | 192.8 | 200.6 | 205.9 | 218.2 |
| | 145.1 | 177.7 | 198.9 | 210.8 | 219.1 | 225.5 | 230.7 | 238.8 | 245.1 | 256.6 | 264.7 | 284.2 |
| 30 j | 137.1 | 165.2 | 182.6 | 192.0 | 198.3 | 203.1 | 206.9 | 212.8 | 217.2 | 224.9 | 230.1 | 242.0 |
| | 168.8 | 203.8 | 226.6 | 239.5 | 248.5 | 255.4 | 261.0 | 269.9 | 276.8 | 289.3 | 298.1 | 319.5 |

4. Estimation des coefficients de Montana.

Formule de Montana : intensité[mm/h] = $a \cdot \text{durée}[\text{min}]^{-b}$ pour une plage de durées

a_1, b_1 : durées < 25 min

a_2, b_2 : durées entre 25 min et 6000 min (= 100 h)

a_3, b_3 : durées > 6000 min (= 100 h)

| Période de retour (années) | a_1 | b_1 | a_2 | b_2 | a_3 | b_3 |
|----------------------------|-------|--------|--------|--------|-------|--------|
| 2 | 134.9 | 0.4714 | 299.9 | 0.7196 | 52.6 | 0.5196 |
| 5 | 193.5 | 0.4713 | 464.0 | 0.7431 | 79.3 | 0.5400 |
| 10 | 236.0 | 0.4687 | 595.6 | 0.7563 | 103.3 | 0.5549 |
| 15 | 261.4 | 0.4666 | 679.1 | 0.7633 | 119.6 | 0.5636 |
| 20 | 279.7 | 0.4650 | 741.9 | 0.7680 | 132.4 | 0.5698 |
| 25 | 294.3 | 0.4636 | 792.9 | 0.7716 | 143.0 | 0.5747 |
| 30 | 306.3 | 0.4624 | 836.2 | 0.7744 | 152.3 | 0.5787 |
| 40 | 325.7 | 0.4605 | 907.4 | 0.7788 | 168.0 | 0.5849 |
| 50 | 341.0 | 0.4589 | 965.5 | 0.7822 | 181.1 | 0.5898 |
| 75 | 369.7 | 0.4559 | 1077.4 | 0.7882 | 207.4 | 0.5988 |
| 100 | 390.6 | 0.4536 | 1162.3 | 0.7924 | 228.0 | 0.6052 |
| 200 | 443.5 | 0.4480 | 1387.3 | 0.8023 | 285.8 | 0.6207 |

Références

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