



Statistiques des précipitations extrêmes des communes belges

Saint-Georges-sur-Meuse (INS 64065)

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 | 7.7 | 11.0 | 13.5 | 15.0 | 16.1 | 17.0 | 17.8 | 19.0 | 19.9 | 21.8 | 23.1 | 26.6 |
| 20 min | 11.1 | 15.9 | 19.5 | 21.7 | 23.3 | 24.6 | 25.7 | 27.5 | 28.9 | 31.5 | 33.5 | 38.5 |
| 30 min | 13.1 | 19.0 | 23.4 | 26.1 | 28.1 | 29.6 | 31.0 | 33.1 | 34.8 | 38.0 | 40.4 | 46.5 |
| 1 h | 16.2 | 22.7 | 27.6 | 30.6 | 32.7 | 34.4 | 35.9 | 38.2 | 40.1 | 43.6 | 46.2 | 52.8 |
| 2 h | 19.4 | 26.8 | 32.3 | 35.6 | 38.0 | 40.0 | 41.6 | 44.2 | 46.3 | 50.2 | 53.1 | 60.5 |
| 3 h | 21.6 | 29.7 | 35.7 | 39.3 | 42.0 | 44.1 | 45.8 | 48.7 | 51.0 | 55.3 | 58.4 | 66.5 |
| 6 h | 26.1 | 34.4 | 40.5 | 44.2 | 46.9 | 49.1 | 50.9 | 53.8 | 56.1 | 60.4 | 63.6 | 71.8 |
| 12 h | 31.8 | 41.7 | 49.1 | 53.5 | 56.7 | 59.3 | 61.4 | 64.9 | 67.6 | 72.8 | 76.5 | 86.2 |
| 1 j | 37.9 | 49.3 | 57.5 | 62.4 | 65.9 | 68.7 | 71.0 | 74.7 | 77.6 | 83.1 | 87.0 | 97.0 |
| 2 j | 47.9 | 61.4 | 70.9 | 76.5 | 80.5 | 83.6 | 86.2 | 90.3 | 93.5 | 99.5 | 103.8 | 114.5 |
| 3 j | 50.8 | 65.1 | 75.1 | 80.9 | 85.0 | 88.2 | 90.8 | 95.0 | 98.3 | 104.3 | 108.6 | 119.3 |
| 4 j | 55.1 | 70.4 | 80.9 | 86.9 | 91.2 | 94.5 | 97.3 | 101.6 | 105.0 | 111.2 | 115.6 | 126.5 |
| 5 j | 62.5 | 79.0 | 90.2 | 96.6 | 101.2 | 104.7 | 107.6 | 112.2 | 115.7 | 122.2 | 126.9 | 138.2 |
| 7 j | 71.9 | 89.7 | 101.7 | 108.6 | 113.4 | 117.1 | 120.1 | 124.9 | 128.7 | 135.4 | 140.3 | 152.0 |
| 10 j | 85.4 | 105.3 | 118.6 | 126.1 | 131.3 | 135.3 | 138.6 | 143.8 | 147.8 | 155.1 | 160.2 | 172.6 |
| 15 j | 103.4 | 126.7 | 141.9 | 150.5 | 156.4 | 161.0 | 164.7 | 170.5 | 175.0 | 183.1 | 188.8 | 202.4 |
| 20 j | 120.4 | 147.5 | 165.1 | 174.9 | 181.7 | 186.9 | 191.1 | 197.7 | 202.7 | 211.8 | 218.2 | 233.4 |
| 25 j | 128.1 | 157.0 | 175.5 | 185.8 | 192.9 | 198.4 | 202.8 | 209.6 | 214.9 | 224.3 | 230.9 | 246.5 |
| 30 j | 150.1 | 181.1 | 201.0 | 211.9 | 219.5 | 225.2 | 229.9 | 237.2 | 242.7 | 252.6 | 259.6 | 276.0 |

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 | 7.7 | 11.0 | 13.5 | 15.0 | 16.1 | 17.0 | 17.8 | 19.0 | 19.9 | 21.8 | 23.1 | 26.6 |
| | 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 | 11.1 | 15.9 | 19.5 | 21.7 | 23.3 | 24.6 | 25.7 | 27.5 | 28.9 | 31.5 | 33.5 | 38.5 |
| | 0.3 | 0.5 | 0.8 | 1.0 | 1.1 | 1.3 | 1.4 | 1.7 | 1.9 | 2.3 | 2.7 | 3.7 |
| 30 min | 13.1 | 19.0 | 23.4 | 26.1 | 28.1 | 29.6 | 31.0 | 33.1 | 34.8 | 38.0 | 40.4 | 46.5 |
| | 0.4 | 0.6 | 0.8 | 1.0 | 1.1 | 1.3 | 1.4 | 1.6 | 1.8 | 2.1 | 2.4 | 3.2 |
| 1 h | 16.2 | 22.7 | 27.6 | 30.6 | 32.7 | 34.4 | 35.9 | 38.2 | 40.1 | 43.6 | 46.2 | 52.8 |
| | 0.4 | 0.7 | 1.0 | 1.3 | 1.5 | 1.7 | 1.8 | 2.1 | 2.4 | 2.9 | 3.3 | 4.5 |
| 2 h | 19.4 | 26.8 | 32.3 | 35.6 | 38.0 | 40.0 | 41.6 | 44.2 | 46.3 | 50.2 | 53.1 | 60.5 |
| | 0.5 | 0.8 | 1.2 | 1.4 | 1.7 | 1.9 | 2.1 | 2.4 | 2.7 | 3.3 | 3.8 | 5.1 |
| 3 h | 21.6 | 29.7 | 35.7 | 39.3 | 42.0 | 44.1 | 45.8 | 48.7 | 51.0 | 55.3 | 58.4 | 66.5 |
| | 0.6 | 0.9 | 1.2 | 1.5 | 1.7 | 1.9 | 2.1 | 2.3 | 2.6 | 3.1 | 3.5 | 4.7 |
| 6 h | 26.1 | 34.4 | 40.5 | 44.2 | 46.9 | 49.1 | 50.9 | 53.8 | 56.1 | 60.4 | 63.6 | 71.8 |
| | 0.7 | 1.0 | 1.3 | 1.6 | 1.9 | 2.2 | 2.4 | 2.8 | 3.2 | 3.9 | 4.5 | 6.2 |
| 12 h | 31.8 | 41.7 | 49.1 | 53.5 | 56.7 | 59.3 | 61.4 | 64.9 | 67.6 | 72.8 | 76.5 | 86.2 |
| | 1.0 | 1.3 | 1.8 | 2.2 | 2.6 | 3.0 | 3.3 | 3.8 | 4.3 | 5.2 | 6.0 | 8.2 |
| 1 j | 37.9 | 49.3 | 57.5 | 62.4 | 65.9 | 68.7 | 71.0 | 74.7 | 77.6 | 83.1 | 87.0 | 97.0 |
| | 1.0 | 1.3 | 1.7 | 1.9 | 2.1 | 2.3 | 2.5 | 2.8 | 3.0 | 3.5 | 4.0 | 5.1 |
| 2 j | 47.9 | 61.4 | 70.9 | 76.5 | 80.5 | 83.6 | 86.2 | 90.3 | 93.5 | 99.5 | 103.8 | 114.5 |
| | 1.5 | 2.1 | 2.8 | 3.3 | 3.7 | 4.1 | 4.4 | 4.9 | 5.4 | 6.2 | 6.9 | 8.8 |
| 3 j | 50.8 | 65.1 | 75.1 | 80.9 | 85.0 | 88.2 | 90.8 | 95.0 | 98.3 | 104.3 | 108.6 | 119.3 |
| | 1.9 | 2.6 | 3.3 | 3.8 | 4.2 | 4.6 | 4.9 | 5.4 | 5.8 | 6.7 | 7.3 | 9.1 |
| 4 j | 55.1 | 70.4 | 80.9 | 86.9 | 91.2 | 94.5 | 97.3 | 101.6 | 105.0 | 111.2 | 115.6 | 126.5 |
| | 2.2 | 2.8 | 3.3 | 3.8 | 4.1 | 4.4 | 4.6 | 5.0 | 5.4 | 6.1 | 6.6 | 8.1 |
| 5 j | 62.5 | 79.0 | 90.2 | 96.6 | 101.2 | 104.7 | 107.6 | 112.2 | 115.7 | 122.2 | 126.9 | 138.2 |
| | 2.5 | 3.1 | 3.7 | 4.0 | 4.4 | 4.6 | 4.8 | 5.2 | 5.5 | 6.2 | 6.7 | 8.0 |
| 7 j | 71.9 | 89.7 | 101.7 | 108.6 | 113.4 | 117.1 | 120.1 | 124.9 | 128.7 | 135.4 | 140.3 | 152.0 |
| | 2.9 | 3.6 | 4.1 | 4.4 | 4.7 | 4.9 | 5.1 | 5.5 | 5.7 | 6.3 | 6.7 | 7.9 |
| 10 j | 85.4 | 105.3 | 118.6 | 126.1 | 131.3 | 135.3 | 138.6 | 143.8 | 147.8 | 155.1 | 160.2 | 172.6 |
| | 3.7 | 4.5 | 5.2 | 5.6 | 5.9 | 6.2 | 6.4 | 6.8 | 7.1 | 7.7 | 8.2 | 9.4 |
| 15 j | 103.4 | 126.7 | 141.9 | 150.5 | 156.4 | 161.0 | 164.7 | 170.5 | 175.0 | 183.1 | 188.8 | 202.4 |
| | 4.5 | 5.5 | 6.1 | 6.5 | 6.8 | 7.0 | 7.1 | 7.4 | 7.6 | 8.1 | 8.4 | 9.2 |
| 20 j | 120.4 | 147.5 | 165.1 | 174.9 | 181.7 | 186.9 | 191.1 | 197.7 | 202.7 | 211.8 | 218.2 | 233.4 |
| | 5.3 | 6.6 | 7.4 | 7.8 | 8.2 | 8.5 | 8.7 | 9.0 | 9.3 | 9.9 | 10.3 | 11.4 |
| 25 j | 128.1 | 157.0 | 175.5 | 185.8 | 192.9 | 198.4 | 202.8 | 209.6 | 214.9 | 224.3 | 230.9 | 246.5 |
| | 5.9 | 7.4 | 8.5 | 9.1 | 9.7 | 10.1 | 10.4 | 11.0 | 11.5 | 12.4 | 13.1 | 14.9 |
| 30 j | 150.1 | 181.1 | 201.0 | 211.9 | 219.5 | 225.2 | 229.9 | 237.2 | 242.7 | 252.6 | 259.6 | 276.0 |
| | 6.6 | 8.2 | 9.5 | 10.3 | 11.0 | 11.6 | 12.0 | 12.8 | 13.5 | 14.7 | 15.6 | 18.1 |

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 | 7.3 | 10.3 | 12.4 | 13.7 | 14.5 | 15.2 | 15.7 | 16.6 | 17.3 | 18.5 | 19.3 | 21.4 |
| | 8.1 | 11.6 | 14.5 | 16.3 | 17.7 | 18.8 | 19.8 | 21.3 | 22.6 | 25.1 | 27.0 | 31.9 |
| 20 min | 10.4 | 14.9 | 18.0 | 19.8 | 21.1 | 22.1 | 22.9 | 24.2 | 25.2 | 27.0 | 28.2 | 31.3 |
| | 11.7 | 16.9 | 21.0 | 23.6 | 25.6 | 27.2 | 28.5 | 30.7 | 32.6 | 36.0 | 38.7 | 45.7 |
| 30 min | 12.3 | 17.8 | 21.8 | 24.2 | 25.8 | 27.2 | 28.3 | 30.0 | 31.4 | 33.9 | 35.7 | 40.3 |
| | 13.8 | 20.1 | 25.0 | 28.0 | 30.3 | 32.1 | 33.7 | 36.2 | 38.2 | 42.1 | 45.1 | 52.7 |
| 1 h | 15.4 | 21.4 | 25.6 | 28.1 | 29.8 | 31.2 | 32.3 | 34.0 | 35.4 | 37.9 | 39.7 | 44.0 |
| | 17.1 | 24.1 | 29.6 | 33.0 | 35.6 | 37.7 | 39.5 | 42.4 | 44.7 | 49.3 | 52.7 | 61.7 |
| 2 h | 18.4 | 25.2 | 30.0 | 32.8 | 34.8 | 36.3 | 37.5 | 39.5 | 41.0 | 43.8 | 45.8 | 50.5 |
| | 20.4 | 28.4 | 34.6 | 38.4 | 41.3 | 43.7 | 45.7 | 48.9 | 51.6 | 56.6 | 60.5 | 70.5 |
| 3 h | 20.3 | 27.9 | 33.3 | 36.4 | 38.7 | 40.4 | 41.8 | 44.1 | 45.9 | 49.1 | 51.5 | 57.2 |
| | 22.8 | 31.4 | 38.1 | 42.2 | 45.3 | 47.8 | 49.9 | 53.3 | 56.1 | 61.4 | 65.4 | 75.8 |
| 6 h | 24.6 | 32.5 | 37.9 | 41.0 | 43.2 | 44.8 | 46.1 | 48.2 | 49.8 | 52.7 | 54.8 | 59.6 |
| | 27.5 | 36.2 | 43.1 | 47.4 | 50.7 | 53.4 | 55.6 | 59.3 | 62.3 | 68.1 | 72.5 | 84.1 |
| 12 h | 29.9 | 39.2 | 45.5 | 49.1 | 51.6 | 53.5 | 55.0 | 57.4 | 59.2 | 62.5 | 64.8 | 70.1 |
| | 33.7 | 44.3 | 52.6 | 57.9 | 61.9 | 65.1 | 67.8 | 72.3 | 76.0 | 83.0 | 88.3 | 102.3 |
| 1 j | 35.9 | 46.7 | 54.3 | 58.7 | 61.7 | 64.1 | 66.1 | 69.2 | 71.7 | 76.1 | 79.3 | 87.1 |
| | 40.0 | 51.9 | 60.8 | 66.2 | 70.1 | 73.3 | 75.9 | 80.2 | 83.6 | 90.0 | 94.8 | 107.0 |
| 2 j | 44.8 | 57.2 | 65.4 | 70.0 | 73.2 | 75.6 | 77.6 | 80.7 | 83.1 | 87.3 | 90.3 | 97.3 |
| | 50.9 | 65.6 | 76.5 | 83.0 | 87.8 | 91.6 | 94.8 | 99.9 | 104.0 | 111.7 | 117.4 | 131.7 |
| 3 j | 47.1 | 60.1 | 68.7 | 73.4 | 76.7 | 79.2 | 81.3 | 84.4 | 86.9 | 91.2 | 94.3 | 101.5 |
| | 54.5 | 70.2 | 81.5 | 88.3 | 93.2 | 97.1 | 100.3 | 105.5 | 109.7 | 117.3 | 123.0 | 137.1 |
| 4 j | 50.9 | 65.0 | 74.3 | 79.5 | 83.2 | 86.0 | 88.2 | 91.7 | 94.4 | 99.3 | 102.7 | 110.7 |
| | 59.3 | 75.8 | 87.4 | 94.3 | 99.2 | 103.1 | 106.3 | 111.4 | 115.5 | 123.1 | 128.6 | 142.3 |
| 5 j | 57.7 | 72.9 | 83.0 | 88.7 | 92.6 | 95.7 | 98.1 | 101.9 | 104.9 | 110.1 | 113.8 | 122.5 |
| | 67.4 | 85.1 | 97.4 | 104.5 | 109.7 | 113.7 | 117.1 | 122.4 | 126.6 | 134.3 | 139.9 | 153.9 |
| 7 j | 66.1 | 82.7 | 93.7 | 99.9 | 104.2 | 107.4 | 110.1 | 114.2 | 117.4 | 123.1 | 127.1 | 136.5 |
| | 77.6 | 96.7 | 109.7 | 117.2 | 122.6 | 126.8 | 130.2 | 135.6 | 139.9 | 147.8 | 153.4 | 167.4 |
| 10 j | 78.2 | 96.4 | 108.4 | 115.0 | 119.6 | 123.2 | 126.0 | 130.5 | 133.9 | 140.0 | 144.2 | 154.1 |
| | 92.5 | 114.2 | 128.8 | 137.1 | 143.0 | 147.5 | 151.2 | 157.2 | 161.8 | 170.2 | 176.3 | 191.1 |
| 15 j | 94.6 | 115.9 | 129.9 | 137.7 | 143.1 | 147.3 | 150.7 | 156.0 | 160.0 | 167.3 | 172.4 | 184.4 |
| | 112.2 | 137.4 | 153.9 | 163.2 | 169.7 | 174.7 | 178.7 | 185.0 | 190.0 | 198.9 | 205.2 | 220.3 |
| 20 j | 110.0 | 134.7 | 150.6 | 159.5 | 165.6 | 170.3 | 174.1 | 179.9 | 184.4 | 192.5 | 198.0 | 211.1 |
| | 130.9 | 160.4 | 179.5 | 190.3 | 197.7 | 203.4 | 208.1 | 215.4 | 221.0 | 231.2 | 238.4 | 255.7 |
| 25 j | 116.5 | 142.5 | 158.9 | 167.9 | 174.0 | 178.6 | 182.3 | 188.0 | 192.4 | 200.0 | 205.2 | 217.3 |
| | 139.8 | 171.4 | 192.1 | 203.7 | 211.8 | 218.1 | 223.2 | 231.2 | 237.4 | 248.6 | 256.6 | 275.8 |
| 30 j | 137.2 | 165.2 | 182.4 | 191.6 | 197.9 | 202.6 | 206.3 | 212.0 | 216.3 | 223.8 | 228.9 | 240.5 |
| | 162.9 | 197.1 | 219.5 | 232.2 | 241.1 | 247.9 | 253.5 | 262.3 | 269.1 | 281.5 | 290.2 | 311.4 |

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 | 131.2 | 0.4567 | 312.0 | 0.7257 | 53.4 | 0.5228 |
| 5 | 188.0 | 0.4561 | 482.9 | 0.7492 | 80.7 | 0.5434 |
| 10 | 229.2 | 0.4534 | 619.7 | 0.7624 | 105.2 | 0.5585 |
| 15 | 253.8 | 0.4512 | 706.6 | 0.7693 | 121.8 | 0.5672 |
| 20 | 271.7 | 0.4495 | 772.0 | 0.7740 | 134.9 | 0.5735 |
| 25 | 285.7 | 0.4481 | 825.1 | 0.7776 | 145.8 | 0.5783 |
| 30 | 297.4 | 0.4469 | 870.0 | 0.7804 | 155.3 | 0.5823 |
| 40 | 316.2 | 0.4450 | 944.2 | 0.7848 | 171.3 | 0.5886 |
| 50 | 331.1 | 0.4434 | 1004.5 | 0.7882 | 184.8 | 0.5935 |
| 75 | 358.9 | 0.4403 | 1121.0 | 0.7942 | 211.6 | 0.6025 |
| 100 | 379.2 | 0.4381 | 1209.2 | 0.7983 | 232.8 | 0.6089 |
| 200 | 430.5 | 0.4324 | 1443.3 | 0.8082 | 291.9 | 0.6245 |

Références

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