



Statistiques des précipitations extrêmes des communes belges

Linent (INS 64047)

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 | 7.4 | 10.7 | 13.1 | 14.6 | 15.7 | 16.5 | 17.3 | 18.4 | 19.4 | 21.2 | 22.5 | 25.9 |
| 20 min | 10.5 | 15.1 | 18.5 | 20.5 | 22.1 | 23.3 | 24.3 | 25.9 | 27.2 | 29.7 | 31.6 | 36.3 |
| 30 min | 12.5 | 18.2 | 22.4 | 25.0 | 26.9 | 28.4 | 29.6 | 31.7 | 33.3 | 36.4 | 38.7 | 44.5 |
| 1 h | 15.5 | 21.5 | 26.0 | 28.8 | 30.8 | 32.4 | 33.7 | 35.8 | 37.6 | 40.8 | 43.2 | 49.3 |
| 2 h | 18.5 | 25.3 | 30.3 | 33.4 | 35.6 | 37.4 | 38.9 | 41.3 | 43.2 | 46.9 | 49.5 | 56.4 |
| 3 h | 20.4 | 28.1 | 33.8 | 37.3 | 39.8 | 41.8 | 43.5 | 46.2 | 48.3 | 52.4 | 55.4 | 63.0 |
| 6 h | 24.7 | 32.8 | 38.9 | 42.5 | 45.2 | 47.3 | 49.1 | 51.9 | 54.2 | 58.5 | 61.6 | 69.6 |
| 12 h | 29.8 | 39.7 | 46.9 | 51.3 | 54.5 | 57.0 | 59.2 | 62.6 | 65.3 | 70.4 | 74.2 | 83.7 |
| 1 j | 36.3 | 47.6 | 55.7 | 60.5 | 64.0 | 66.8 | 69.1 | 72.7 | 75.6 | 81.0 | 85.0 | 94.9 |
| 2 j | 45.2 | 58.4 | 67.6 | 73.1 | 77.0 | 80.0 | 82.5 | 86.5 | 89.6 | 95.5 | 99.7 | 110.1 |
| 3 j | 47.5 | 61.3 | 70.9 | 76.5 | 80.4 | 83.5 | 86.1 | 90.1 | 93.2 | 99.1 | 103.2 | 113.5 |
| 4 j | 51.3 | 66.0 | 76.0 | 81.8 | 85.9 | 89.1 | 91.8 | 95.9 | 99.2 | 105.1 | 109.4 | 119.8 |
| 5 j | 58.2 | 73.8 | 84.5 | 90.6 | 94.9 | 98.3 | 101.0 | 105.3 | 108.7 | 114.9 | 119.3 | 130.1 |
| 7 j | 66.6 | 83.5 | 94.9 | 101.4 | 106.0 | 109.5 | 112.4 | 117.0 | 120.5 | 126.9 | 131.5 | 142.6 |
| 10 j | 78.7 | 97.2 | 109.4 | 116.4 | 121.2 | 125.0 | 128.0 | 132.8 | 136.6 | 143.3 | 148.1 | 159.5 |
| 15 j | 95.2 | 116.8 | 131.0 | 138.9 | 144.5 | 148.7 | 152.2 | 157.6 | 161.7 | 169.2 | 174.5 | 187.2 |
| 20 j | 110.8 | 135.9 | 152.1 | 161.2 | 167.5 | 172.3 | 176.2 | 182.3 | 187.0 | 195.4 | 201.3 | 215.4 |
| 25 j | 117.3 | 144.1 | 161.3 | 170.8 | 177.4 | 182.4 | 186.5 | 192.8 | 197.7 | 206.5 | 212.6 | 227.1 |
| 30 j | 138.1 | 167.2 | 185.7 | 196.0 | 203.0 | 208.4 | 212.8 | 219.6 | 224.7 | 234.0 | 240.5 | 255.8 |

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 | 7.4 | 10.7 | 13.1 | 14.6 | 15.7 | 16.5 | 17.3 | 18.4 | 19.4 | 21.2 | 22.5 | 25.9 |
| | 0.2 | 0.3 | 0.5 | 0.7 | 0.8 | 0.9 | 1.0 | 1.2 | 1.3 | 1.7 | 1.9 | 2.6 |
| 20 min | 10.5 | 15.1 | 18.5 | 20.5 | 22.1 | 23.3 | 24.3 | 25.9 | 27.2 | 29.7 | 31.6 | 36.3 |
| | 0.3 | 0.5 | 0.8 | 0.9 | 1.1 | 1.2 | 1.3 | 1.6 | 1.7 | 2.1 | 2.4 | 3.3 |
| 30 min | 12.5 | 18.2 | 22.4 | 25.0 | 26.9 | 28.4 | 29.6 | 31.7 | 33.3 | 36.4 | 38.7 | 44.5 |
| | 0.4 | 0.7 | 0.9 | 1.1 | 1.3 | 1.5 | 1.6 | 1.8 | 2.0 | 2.4 | 2.7 | 3.5 |
| 1 h | 15.5 | 21.5 | 26.0 | 28.8 | 30.8 | 32.4 | 33.7 | 35.8 | 37.6 | 40.8 | 43.2 | 49.3 |
| | 0.5 | 0.8 | 1.1 | 1.4 | 1.6 | 1.8 | 2.0 | 2.3 | 2.5 | 3.1 | 3.5 | 4.6 |
| 2 h | 18.5 | 25.3 | 30.3 | 33.4 | 35.6 | 37.4 | 38.9 | 41.3 | 43.2 | 46.9 | 49.5 | 56.4 |
| | 0.6 | 0.9 | 1.3 | 1.6 | 1.9 | 2.1 | 2.3 | 2.6 | 2.9 | 3.4 | 3.9 | 5.2 |
| 3 h | 20.4 | 28.1 | 33.8 | 37.3 | 39.8 | 41.8 | 43.5 | 46.2 | 48.3 | 52.4 | 55.4 | 63.0 |
| | 0.7 | 1.0 | 1.4 | 1.7 | 1.9 | 2.1 | 2.3 | 2.6 | 2.9 | 3.4 | 3.9 | 5.1 |
| 6 h | 24.7 | 32.8 | 38.9 | 42.5 | 45.2 | 47.3 | 49.1 | 51.9 | 54.2 | 58.5 | 61.6 | 69.6 |
| | 0.8 | 1.1 | 1.6 | 1.9 | 2.2 | 2.5 | 2.7 | 3.1 | 3.5 | 4.2 | 4.8 | 6.5 |
| 12 h | 29.8 | 39.7 | 46.9 | 51.3 | 54.5 | 57.0 | 59.2 | 62.6 | 65.3 | 70.4 | 74.2 | 83.7 |
| | 1.1 | 1.5 | 2.0 | 2.5 | 2.8 | 3.2 | 3.5 | 4.0 | 4.4 | 5.4 | 6.1 | 8.3 |
| 1 j | 36.3 | 47.6 | 55.7 | 60.5 | 64.0 | 66.8 | 69.1 | 72.7 | 75.6 | 81.0 | 85.0 | 94.9 |
| | 1.2 | 1.5 | 1.9 | 2.2 | 2.4 | 2.6 | 2.8 | 3.1 | 3.3 | 3.9 | 4.3 | 5.4 |
| 2 j | 45.2 | 58.4 | 67.6 | 73.1 | 77.0 | 80.0 | 82.5 | 86.5 | 89.6 | 95.5 | 99.7 | 110.1 |
| | 1.8 | 2.5 | 3.2 | 3.7 | 4.2 | 4.5 | 4.9 | 5.4 | 5.9 | 6.7 | 7.4 | 9.3 |
| 3 j | 47.5 | 61.3 | 70.9 | 76.5 | 80.4 | 83.5 | 86.1 | 90.1 | 93.2 | 99.1 | 103.2 | 113.5 |
| | 2.2 | 3.0 | 3.7 | 4.3 | 4.7 | 5.1 | 5.4 | 5.9 | 6.3 | 7.2 | 7.9 | 9.7 |
| 4 j | 51.3 | 66.0 | 76.0 | 81.8 | 85.9 | 89.1 | 91.8 | 95.9 | 99.2 | 105.1 | 109.4 | 119.8 |
| | 2.5 | 3.2 | 3.8 | 4.3 | 4.6 | 4.9 | 5.2 | 5.6 | 5.9 | 6.6 | 7.2 | 8.7 |
| 5 j | 58.2 | 73.8 | 84.5 | 90.6 | 94.9 | 98.3 | 101.0 | 105.3 | 108.7 | 114.9 | 119.3 | 130.1 |
| | 2.9 | 3.6 | 4.2 | 4.6 | 4.9 | 5.2 | 5.4 | 5.8 | 6.1 | 6.8 | 7.3 | 8.6 |
| 7 j | 66.6 | 83.5 | 94.9 | 101.4 | 106.0 | 109.5 | 112.4 | 117.0 | 120.5 | 126.9 | 131.5 | 142.6 |
| | 3.4 | 4.2 | 4.8 | 5.2 | 5.5 | 5.7 | 5.9 | 6.3 | 6.6 | 7.2 | 7.6 | 8.8 |
| 10 j | 78.7 | 97.2 | 109.4 | 116.4 | 121.2 | 125.0 | 128.0 | 132.8 | 136.6 | 143.3 | 148.1 | 159.5 |
| | 4.2 | 5.3 | 6.0 | 6.5 | 6.9 | 7.2 | 7.4 | 7.8 | 8.2 | 8.8 | 9.3 | 10.5 |
| 15 j | 95.2 | 116.8 | 131.0 | 138.9 | 144.5 | 148.7 | 152.2 | 157.6 | 161.7 | 169.2 | 174.5 | 187.2 |
| | 5.2 | 6.4 | 7.1 | 7.5 | 7.9 | 8.1 | 8.3 | 8.6 | 8.9 | 9.3 | 9.7 | 10.5 |
| 20 j | 110.8 | 135.9 | 152.1 | 161.2 | 167.5 | 172.3 | 176.2 | 182.3 | 187.0 | 195.4 | 201.3 | 215.4 |
| | 6.2 | 7.6 | 8.5 | 9.1 | 9.5 | 9.8 | 10.1 | 10.5 | 10.8 | 11.4 | 11.9 | 13.0 |
| 25 j | 117.3 | 144.1 | 161.3 | 170.8 | 177.4 | 182.4 | 186.5 | 192.8 | 197.7 | 206.5 | 212.6 | 227.1 |
| | 6.9 | 8.5 | 9.7 | 10.4 | 10.9 | 11.4 | 11.7 | 12.3 | 12.8 | 13.7 | 14.4 | 16.2 |
| 30 j | 138.1 | 167.2 | 185.7 | 196.0 | 203.0 | 208.4 | 212.8 | 219.6 | 224.7 | 234.0 | 240.5 | 255.8 |
| | 7.6 | 9.4 | 10.8 | 11.7 | 12.3 | 12.9 | 13.4 | 14.2 | 14.8 | 16.0 | 17.0 | 19.4 |

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 | 7.0 | 10.0 | 12.0 | 13.2 | 14.1 | 14.7 | 15.3 | 16.1 | 16.7 | 17.9 | 18.8 | 20.8 |
| | 7.8 | 11.3 | 14.1 | 15.9 | 17.2 | 18.3 | 19.3 | 20.8 | 22.0 | 24.4 | 26.2 | 31.0 |
| 20 min | 9.9 | 14.0 | 17.0 | 18.7 | 19.9 | 20.9 | 21.7 | 22.9 | 23.8 | 25.6 | 26.8 | 29.8 |
| | 11.2 | 16.1 | 19.9 | 22.4 | 24.2 | 25.7 | 26.9 | 29.0 | 30.6 | 33.9 | 36.3 | 42.8 |
| 30 min | 11.7 | 16.9 | 20.6 | 22.7 | 24.3 | 25.5 | 26.5 | 28.1 | 29.4 | 31.8 | 33.5 | 37.7 |
| | 13.3 | 19.5 | 24.2 | 27.2 | 29.5 | 31.2 | 32.8 | 35.2 | 37.2 | 41.0 | 43.9 | 51.4 |
| 1 h | 14.6 | 20.0 | 23.8 | 26.0 | 27.6 | 28.8 | 29.8 | 31.3 | 32.6 | 34.8 | 36.4 | 40.3 |
| | 16.4 | 23.1 | 28.3 | 31.5 | 34.0 | 35.9 | 37.6 | 40.3 | 42.5 | 46.8 | 50.0 | 58.4 |
| 2 h | 17.3 | 23.4 | 27.7 | 30.2 | 32.0 | 33.4 | 34.5 | 36.3 | 37.6 | 40.1 | 41.9 | 46.2 |
| | 19.6 | 27.1 | 32.9 | 36.5 | 39.3 | 41.5 | 43.3 | 46.4 | 48.8 | 53.6 | 57.1 | 66.5 |
| 3 h | 19.1 | 26.1 | 31.1 | 33.9 | 36.0 | 37.6 | 38.9 | 41.0 | 42.7 | 45.7 | 47.8 | 53.1 |
| | 21.8 | 30.1 | 36.6 | 40.6 | 43.6 | 46.0 | 48.0 | 51.3 | 54.0 | 59.1 | 62.9 | 72.9 |
| 6 h | 23.1 | 30.6 | 35.8 | 38.8 | 40.9 | 42.5 | 43.8 | 45.8 | 47.4 | 50.2 | 52.2 | 56.9 |
| | 26.2 | 35.1 | 41.9 | 46.2 | 49.5 | 52.1 | 54.4 | 58.0 | 61.0 | 66.7 | 71.0 | 82.4 |
| 12 h | 27.6 | 36.7 | 42.9 | 46.5 | 48.9 | 50.8 | 52.4 | 54.7 | 56.6 | 59.8 | 62.1 | 67.4 |
| | 32.0 | 42.6 | 50.9 | 56.1 | 60.1 | 63.3 | 65.9 | 70.4 | 74.0 | 80.9 | 86.2 | 100.0 |
| 1 j | 33.9 | 44.6 | 52.0 | 56.3 | 59.3 | 61.7 | 63.6 | 66.7 | 69.1 | 73.5 | 76.6 | 84.3 |
| | 38.6 | 50.6 | 59.4 | 64.8 | 68.7 | 71.9 | 74.5 | 78.8 | 82.2 | 88.6 | 93.3 | 105.5 |
| 2 j | 41.6 | 53.5 | 61.4 | 65.7 | 68.8 | 71.1 | 73.0 | 75.9 | 78.2 | 82.2 | 85.1 | 91.8 |
| | 48.7 | 63.2 | 73.9 | 80.4 | 85.1 | 88.9 | 92.0 | 97.1 | 101.1 | 108.7 | 114.3 | 128.4 |
| 3 j | 43.2 | 55.6 | 63.6 | 68.1 | 71.2 | 73.6 | 75.5 | 78.5 | 80.8 | 84.9 | 87.8 | 94.6 |
| | 51.8 | 67.1 | 78.2 | 84.8 | 89.7 | 93.5 | 96.6 | 101.7 | 105.7 | 113.2 | 118.7 | 132.4 |
| 4 j | 46.4 | 59.7 | 68.5 | 73.5 | 76.9 | 79.5 | 81.6 | 85.0 | 87.5 | 92.1 | 95.3 | 102.9 |
| | 56.3 | 72.2 | 83.5 | 90.2 | 95.0 | 98.8 | 101.9 | 106.9 | 110.8 | 118.1 | 123.5 | 136.8 |
| 5 j | 52.6 | 66.8 | 76.3 | 81.6 | 85.3 | 88.1 | 90.4 | 94.0 | 96.7 | 101.6 | 105.1 | 113.3 |
| | 63.8 | 80.9 | 92.7 | 99.6 | 104.6 | 108.4 | 111.6 | 116.7 | 120.8 | 128.2 | 133.6 | 147.0 |
| 7 j | 59.8 | 75.4 | 85.6 | 91.3 | 95.3 | 98.3 | 100.8 | 104.6 | 107.6 | 112.9 | 116.6 | 125.4 |
| | 73.3 | 91.7 | 104.2 | 111.5 | 116.7 | 120.7 | 124.0 | 129.3 | 133.4 | 141.0 | 146.5 | 159.9 |
| 10 j | 70.4 | 86.8 | 97.6 | 103.6 | 107.8 | 110.9 | 113.5 | 117.5 | 120.6 | 126.1 | 129.9 | 138.9 |
| | 87.0 | 107.5 | 121.3 | 129.2 | 134.7 | 139.1 | 142.6 | 148.2 | 152.5 | 160.5 | 166.2 | 180.2 |
| 15 j | 84.9 | 104.4 | 117.0 | 124.1 | 129.1 | 132.8 | 135.9 | 140.7 | 144.4 | 151.0 | 155.6 | 166.5 |
| | 105.4 | 129.3 | 144.9 | 153.7 | 159.9 | 164.6 | 168.4 | 174.4 | 179.1 | 187.5 | 193.5 | 207.9 |
| 20 j | 98.7 | 121.0 | 135.4 | 143.4 | 148.9 | 153.1 | 156.5 | 161.7 | 165.8 | 173.0 | 178.0 | 189.8 |
| | 122.9 | 150.8 | 168.9 | 179.0 | 186.1 | 191.5 | 195.9 | 202.8 | 208.1 | 217.8 | 224.6 | 240.9 |
| 25 j | 103.9 | 127.4 | 142.3 | 150.4 | 156.0 | 160.2 | 163.5 | 168.7 | 172.6 | 179.6 | 184.3 | 195.3 |
| | 130.8 | 160.7 | 180.2 | 191.1 | 198.8 | 204.7 | 209.5 | 217.0 | 222.8 | 233.4 | 240.8 | 258.9 |
| 30 j | 123.2 | 148.8 | 164.6 | 173.1 | 178.8 | 183.1 | 186.6 | 191.8 | 195.7 | 202.6 | 207.3 | 217.9 |
| | 153.1 | 185.5 | 206.8 | 218.8 | 227.2 | 233.7 | 239.0 | 247.3 | 253.7 | 265.4 | 273.8 | 293.8 |

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 | 131.0 | 0.4700 | 302.5 | 0.7299 | 54.9 | 0.5336 |
| 5 | 190.1 | 0.4747 | 462.6 | 0.7510 | 86.6 | 0.5584 |
| 10 | 233.1 | 0.4742 | 590.7 | 0.7631 | 115.3 | 0.5754 |
| 15 | 258.7 | 0.4731 | 671.8 | 0.7696 | 134.9 | 0.5850 |
| 20 | 277.3 | 0.4721 | 732.9 | 0.7740 | 150.3 | 0.5918 |
| 25 | 292.0 | 0.4711 | 782.4 | 0.7773 | 163.1 | 0.5971 |
| 30 | 304.2 | 0.4703 | 824.4 | 0.7800 | 174.3 | 0.6014 |
| 40 | 323.8 | 0.4688 | 893.6 | 0.7842 | 193.3 | 0.6082 |
| 50 | 339.3 | 0.4675 | 949.8 | 0.7873 | 209.2 | 0.6134 |
| 75 | 368.3 | 0.4651 | 1058.4 | 0.7930 | 241.0 | 0.6229 |
| 100 | 389.6 | 0.4632 | 1140.7 | 0.7970 | 266.1 | 0.6297 |
| 200 | 443.1 | 0.4583 | 1358.8 | 0.8065 | 336.5 | 0.6460 |

Références

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