



Statistiques des précipitations extrêmes des communes belges

Gouvy (INS 82037)

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 | 8.1 | 11.6 | 14.2 | 15.8 | 17.0 | 18.0 | 18.8 | 20.0 | 21.1 | 23.0 | 24.4 | 28.1 |
| 20 min | 12.1 | 17.5 | 21.6 | 24.0 | 25.8 | 27.3 | 28.5 | 30.5 | 32.0 | 35.0 | 37.2 | 42.9 |
| 30 min | 14.2 | 20.6 | 25.4 | 28.3 | 30.4 | 32.1 | 33.5 | 35.8 | 37.7 | 41.2 | 43.7 | 50.4 |
| 1 h | 17.6 | 25.1 | 30.7 | 34.1 | 36.6 | 38.6 | 40.2 | 42.9 | 45.0 | 49.1 | 52.0 | 59.7 |
| 2 h | 21.4 | 29.9 | 36.2 | 40.0 | 42.8 | 45.0 | 46.9 | 49.9 | 52.3 | 56.8 | 60.2 | 68.7 |
| 3 h | 23.7 | 32.7 | 39.3 | 43.3 | 46.3 | 48.6 | 50.5 | 53.7 | 56.2 | 60.9 | 64.4 | 73.3 |
| 6 h | 28.8 | 37.4 | 43.7 | 47.6 | 50.4 | 52.6 | 54.5 | 57.5 | 59.8 | 64.3 | 67.7 | 76.1 |
| 12 h | 35.7 | 45.8 | 53.3 | 57.8 | 61.1 | 63.7 | 65.9 | 69.4 | 72.2 | 77.4 | 81.3 | 91.1 |
| 1 j | 42.8 | 54.5 | 62.9 | 67.9 | 71.5 | 74.3 | 76.7 | 80.5 | 83.4 | 89.0 | 93.1 | 103.3 |
| 2 j | 55.7 | 70.3 | 80.5 | 86.5 | 90.8 | 94.2 | 97.0 | 101.4 | 104.9 | 111.3 | 115.9 | 127.5 |
| 3 j | 60.3 | 76.1 | 87.2 | 93.5 | 98.1 | 101.6 | 104.5 | 109.2 | 112.8 | 119.5 | 124.3 | 136.1 |
| 4 j | 66.0 | 83.1 | 94.8 | 101.6 | 106.4 | 110.1 | 113.2 | 118.0 | 121.8 | 128.8 | 133.7 | 145.9 |
| 5 j | 75.1 | 93.9 | 106.7 | 114.1 | 119.3 | 123.4 | 126.7 | 131.9 | 136.0 | 143.4 | 148.7 | 161.7 |
| 7 j | 87.3 | 107.7 | 121.5 | 129.3 | 134.8 | 139.1 | 142.6 | 148.1 | 152.4 | 160.1 | 165.7 | 179.1 |
| 10 j | 104.8 | 129.0 | 145.0 | 154.1 | 160.5 | 165.4 | 169.4 | 175.6 | 180.5 | 189.3 | 195.6 | 210.6 |
| 15 j | 127.2 | 155.3 | 173.6 | 183.9 | 191.1 | 196.6 | 201.1 | 208.1 | 213.4 | 223.2 | 230.0 | 246.4 |
| 20 j | 148.3 | 181.3 | 202.6 | 214.5 | 222.8 | 229.1 | 234.2 | 242.2 | 248.4 | 259.4 | 267.2 | 285.7 |
| 25 j | 159.5 | 194.4 | 216.9 | 229.4 | 238.0 | 244.6 | 249.9 | 258.2 | 264.6 | 276.0 | 284.0 | 303.0 |
| 30 j | 184.7 | 221.6 | 245.2 | 258.2 | 267.2 | 274.0 | 279.6 | 288.2 | 294.8 | 306.6 | 314.8 | 334.3 |

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 | 8.1 | 11.6 | 14.2 | 15.8 | 17.0 | 18.0 | 18.8 | 20.0 | 21.1 | 23.0 | 24.4 | 28.1 |
| | 0.3 | 0.5 | 0.7 | 0.9 | 1.0 | 1.2 | 1.3 | 1.5 | 1.6 | 2.0 | 2.3 | 3.1 |
| 20 min | 12.1 | 17.5 | 21.6 | 24.0 | 25.8 | 27.3 | 28.5 | 30.5 | 32.0 | 35.0 | 37.2 | 42.9 |
| | 0.5 | 0.8 | 1.2 | 1.4 | 1.7 | 1.9 | 2.0 | 2.4 | 2.6 | 3.2 | 3.6 | 4.8 |
| 30 min | 14.2 | 20.6 | 25.4 | 28.3 | 30.4 | 32.1 | 33.5 | 35.8 | 37.7 | 41.2 | 43.7 | 50.4 |
| | 0.5 | 0.8 | 1.0 | 1.2 | 1.3 | 1.5 | 1.6 | 1.8 | 1.9 | 2.3 | 2.5 | 3.3 |
| 1 h | 17.6 | 25.1 | 30.7 | 34.1 | 36.6 | 38.6 | 40.2 | 42.9 | 45.0 | 49.1 | 52.0 | 59.7 |
| | 0.6 | 0.9 | 1.3 | 1.6 | 1.8 | 2.0 | 2.2 | 2.6 | 2.8 | 3.4 | 3.8 | 5.2 |
| 2 h | 21.4 | 29.9 | 36.2 | 40.0 | 42.8 | 45.0 | 46.9 | 49.9 | 52.3 | 56.8 | 60.2 | 68.7 |
| | 0.7 | 1.1 | 1.5 | 1.8 | 2.1 | 2.3 | 2.5 | 2.9 | 3.2 | 3.8 | 4.3 | 5.8 |
| 3 h | 23.7 | 32.7 | 39.3 | 43.3 | 46.3 | 48.6 | 50.5 | 53.7 | 56.2 | 60.9 | 64.4 | 73.3 |
| | 0.8 | 1.2 | 1.5 | 1.8 | 2.0 | 2.2 | 2.4 | 2.7 | 3.0 | 3.5 | 3.9 | 5.1 |
| 6 h | 28.8 | 37.4 | 43.7 | 47.6 | 50.4 | 52.6 | 54.5 | 57.5 | 59.8 | 64.3 | 67.7 | 76.1 |
| | 0.9 | 1.2 | 1.5 | 1.9 | 2.1 | 2.4 | 2.6 | 3.0 | 3.4 | 4.1 | 4.7 | 6.5 |
| 12 h | 35.7 | 45.8 | 53.3 | 57.8 | 61.1 | 63.7 | 65.9 | 69.4 | 72.2 | 77.4 | 81.3 | 91.1 |
| | 1.1 | 1.5 | 2.1 | 2.5 | 2.9 | 3.3 | 3.6 | 4.2 | 4.7 | 5.7 | 6.5 | 8.8 |
| 1 j | 42.8 | 54.5 | 62.9 | 67.9 | 71.5 | 74.3 | 76.7 | 80.5 | 83.4 | 89.0 | 93.1 | 103.3 |
| | 1.1 | 1.3 | 1.6 | 1.8 | 2.0 | 2.1 | 2.3 | 2.5 | 2.7 | 3.2 | 3.5 | 4.6 |
| 2 j | 55.7 | 70.3 | 80.5 | 86.5 | 90.8 | 94.2 | 97.0 | 101.4 | 104.9 | 111.3 | 115.9 | 127.5 |
| | 1.7 | 2.2 | 2.7 | 3.1 | 3.5 | 3.8 | 4.0 | 4.5 | 4.9 | 5.7 | 6.3 | 8.1 |
| 3 j | 60.3 | 76.1 | 87.2 | 93.5 | 98.1 | 101.6 | 104.5 | 109.2 | 112.8 | 119.5 | 124.3 | 136.1 |
| | 2.2 | 2.8 | 3.4 | 3.9 | 4.2 | 4.5 | 4.8 | 5.3 | 5.7 | 6.5 | 7.1 | 8.8 |
| 4 j | 66.0 | 83.1 | 94.8 | 101.6 | 106.4 | 110.1 | 113.2 | 118.0 | 121.8 | 128.8 | 133.7 | 145.9 |
| | 2.5 | 3.1 | 3.7 | 4.1 | 4.4 | 4.6 | 4.9 | 5.3 | 5.6 | 6.3 | 6.8 | 8.2 |
| 5 j | 75.1 | 93.9 | 106.7 | 114.1 | 119.3 | 123.4 | 126.7 | 131.9 | 136.0 | 143.4 | 148.7 | 161.7 |
| | 2.9 | 3.6 | 4.3 | 4.7 | 5.0 | 5.3 | 5.5 | 5.9 | 6.3 | 6.9 | 7.4 | 8.9 |
| 7 j | 87.3 | 107.7 | 121.5 | 129.3 | 134.8 | 139.1 | 142.6 | 148.1 | 152.4 | 160.1 | 165.7 | 179.1 |
| | 3.4 | 4.2 | 4.7 | 5.1 | 5.4 | 5.6 | 5.8 | 6.1 | 6.4 | 7.0 | 7.4 | 8.5 |
| 10 j | 104.8 | 129.0 | 145.0 | 154.1 | 160.5 | 165.4 | 169.4 | 175.6 | 180.5 | 189.3 | 195.6 | 210.6 |
| | 4.4 | 5.4 | 6.2 | 6.7 | 7.1 | 7.4 | 7.6 | 8.1 | 8.4 | 9.1 | 9.6 | 11.0 |
| 15 j | 127.2 | 155.3 | 173.6 | 183.9 | 191.1 | 196.6 | 201.1 | 208.1 | 213.4 | 223.2 | 230.0 | 246.4 |
| | 5.3 | 6.5 | 7.3 | 7.8 | 8.1 | 8.4 | 8.6 | 9.0 | 9.2 | 9.8 | 10.1 | 11.2 |
| 20 j | 148.3 | 181.3 | 202.6 | 214.5 | 222.8 | 229.1 | 234.2 | 242.2 | 248.4 | 259.4 | 267.2 | 285.7 |
| | 6.3 | 7.7 | 8.7 | 9.2 | 9.6 | 10.0 | 10.2 | 10.6 | 10.9 | 11.6 | 12.0 | 13.3 |
| 25 j | 159.5 | 194.4 | 216.9 | 229.4 | 238.0 | 244.6 | 249.9 | 258.2 | 264.6 | 276.0 | 284.0 | 303.0 |
| | 7.0 | 8.7 | 10.0 | 10.8 | 11.4 | 11.9 | 12.3 | 13.0 | 13.5 | 14.6 | 15.3 | 17.4 |
| 30 j | 184.7 | 221.6 | 245.2 | 258.2 | 267.2 | 274.0 | 279.6 | 288.2 | 294.8 | 306.6 | 314.8 | 334.3 |
| | 7.6 | 9.4 | 10.8 | 11.7 | 12.4 | 13.0 | 13.5 | 14.3 | 14.9 | 16.2 | 17.2 | 19.7 |

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 | 7.5 | 10.7 | 12.8 | 14.1 | 15.0 | 15.7 | 16.3 | 17.2 | 17.8 | 19.1 | 20.0 | 22.1 |
| | 8.7 | 12.6 | 15.6 | 17.6 | 19.0 | 20.2 | 21.2 | 22.9 | 24.3 | 26.9 | 28.9 | 34.1 |
| 20 min | 11.2 | 16.0 | 19.3 | 21.2 | 22.6 | 23.6 | 24.5 | 25.9 | 26.9 | 28.8 | 30.2 | 33.5 |
| | 13.0 | 19.0 | 23.8 | 26.8 | 29.1 | 31.0 | 32.5 | 35.1 | 37.2 | 41.2 | 44.2 | 52.2 |
| 30 min | 13.1 | 19.0 | 23.4 | 25.9 | 27.8 | 29.2 | 30.4 | 32.4 | 33.9 | 36.7 | 38.8 | 43.9 |
| | 15.2 | 22.1 | 27.4 | 30.6 | 33.0 | 35.0 | 36.6 | 39.3 | 41.5 | 45.6 | 48.7 | 56.8 |
| 1 h | 16.4 | 23.3 | 28.1 | 31.0 | 33.0 | 34.6 | 35.8 | 37.9 | 39.5 | 42.4 | 44.5 | 49.6 |
| | 18.8 | 27.0 | 33.3 | 37.2 | 40.2 | 42.6 | 44.6 | 47.9 | 50.6 | 55.7 | 59.6 | 69.8 |
| 2 h | 20.0 | 27.8 | 33.3 | 36.5 | 38.8 | 40.5 | 42.0 | 44.3 | 46.1 | 49.4 | 51.7 | 57.4 |
| | 22.8 | 32.0 | 39.1 | 43.5 | 46.9 | 49.5 | 51.8 | 55.5 | 58.5 | 64.3 | 68.6 | 80.0 |
| 3 h | 22.2 | 30.4 | 36.3 | 39.8 | 42.2 | 44.2 | 45.8 | 48.4 | 50.4 | 54.1 | 56.7 | 63.3 |
| | 25.3 | 35.0 | 42.3 | 46.9 | 50.3 | 53.0 | 55.3 | 59.0 | 62.1 | 67.8 | 72.1 | 83.4 |
| 6 h | 27.0 | 35.1 | 40.7 | 43.9 | 46.2 | 47.9 | 49.3 | 51.5 | 53.2 | 56.3 | 58.4 | 63.4 |
| | 30.5 | 39.7 | 46.8 | 51.2 | 54.6 | 57.3 | 59.6 | 63.4 | 66.5 | 72.4 | 76.9 | 88.7 |
| 12 h | 33.5 | 42.9 | 49.3 | 52.8 | 55.3 | 57.2 | 58.8 | 61.2 | 63.0 | 66.3 | 68.6 | 73.8 |
| | 37.9 | 48.8 | 57.3 | 62.7 | 66.8 | 70.1 | 72.9 | 77.5 | 81.3 | 88.5 | 94.0 | 108.3 |
| 1 j | 40.6 | 51.8 | 59.8 | 64.4 | 67.6 | 70.2 | 72.2 | 75.5 | 78.1 | 82.8 | 86.2 | 94.4 |
| | 45.0 | 57.1 | 66.0 | 71.4 | 75.3 | 78.5 | 81.1 | 85.4 | 88.8 | 95.2 | 100.0 | 112.3 |
| 2 j | 52.3 | 66.0 | 75.2 | 80.4 | 84.0 | 86.8 | 89.0 | 92.5 | 95.2 | 100.1 | 103.5 | 111.6 |
| | 59.0 | 74.6 | 85.8 | 92.7 | 97.6 | 101.6 | 104.9 | 110.2 | 114.5 | 122.4 | 128.3 | 143.3 |
| 3 j | 56.0 | 70.7 | 80.5 | 86.0 | 89.8 | 92.7 | 95.1 | 98.8 | 101.7 | 106.8 | 110.4 | 118.9 |
| | 64.5 | 81.6 | 93.8 | 101.1 | 106.4 | 110.5 | 114.0 | 119.5 | 123.9 | 132.2 | 138.2 | 153.3 |
| 4 j | 61.2 | 77.0 | 87.7 | 93.6 | 97.8 | 101.0 | 103.6 | 107.7 | 110.8 | 116.5 | 120.4 | 129.8 |
| | 70.9 | 89.2 | 102.0 | 109.6 | 115.0 | 119.2 | 122.7 | 128.4 | 132.8 | 141.0 | 147.0 | 162.0 |
| 5 j | 69.4 | 86.8 | 98.4 | 104.9 | 109.5 | 113.0 | 115.8 | 120.3 | 123.7 | 129.8 | 134.2 | 144.4 |
| | 80.7 | 101.0 | 115.1 | 123.3 | 129.1 | 133.7 | 137.5 | 143.5 | 148.2 | 157.0 | 163.3 | 179.1 |
| 7 j | 80.5 | 99.6 | 112.2 | 119.3 | 124.3 | 128.1 | 131.2 | 136.1 | 139.8 | 146.5 | 151.2 | 162.4 |
| | 94.0 | 115.9 | 130.8 | 139.3 | 145.4 | 150.1 | 154.0 | 160.1 | 164.9 | 173.8 | 180.1 | 195.8 |
| 10 j | 96.2 | 118.3 | 132.8 | 140.9 | 146.6 | 150.9 | 154.4 | 159.8 | 164.0 | 171.5 | 176.8 | 189.1 |
| | 113.3 | 139.6 | 157.2 | 167.3 | 174.4 | 179.8 | 184.3 | 191.4 | 197.0 | 207.1 | 214.3 | 232.1 |
| 15 j | 116.8 | 142.5 | 159.3 | 168.6 | 175.1 | 180.1 | 184.2 | 190.5 | 195.3 | 204.1 | 210.2 | 224.6 |
| | 137.7 | 168.0 | 188.0 | 199.2 | 207.0 | 213.0 | 217.9 | 225.6 | 231.6 | 242.3 | 249.9 | 268.3 |
| 20 j | 136.0 | 166.1 | 185.6 | 196.4 | 203.9 | 209.6 | 214.2 | 221.4 | 226.9 | 236.8 | 243.6 | 259.7 |
| | 160.6 | 196.4 | 219.7 | 232.6 | 241.7 | 248.6 | 254.2 | 263.0 | 269.8 | 282.1 | 290.8 | 311.7 |
| 25 j | 145.8 | 177.3 | 197.3 | 208.1 | 215.6 | 221.3 | 225.8 | 232.8 | 238.1 | 247.5 | 254.0 | 268.8 |
| | 173.2 | 211.6 | 236.6 | 250.6 | 260.4 | 267.9 | 274.0 | 283.7 | 291.1 | 304.6 | 314.1 | 337.1 |
| 30 j | 169.9 | 203.3 | 224.0 | 235.2 | 242.9 | 248.6 | 253.2 | 260.2 | 265.5 | 274.8 | 281.1 | 295.6 |
| | 199.6 | 240.0 | 266.4 | 281.2 | 291.5 | 299.5 | 306.0 | 316.2 | 324.1 | 338.4 | 348.5 | 373.0 |

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 | 138.2 | 0.4520 | 314.0 | 0.7069 | 50.7 | 0.4973 |
| 5 | 193.3 | 0.4414 | 497.6 | 0.7351 | 69.6 | 0.5090 |
| 10 | 233.2 | 0.4343 | 645.5 | 0.7505 | 86.7 | 0.5198 |
| 15 | 257.0 | 0.4302 | 739.6 | 0.7585 | 98.3 | 0.5266 |
| 20 | 274.3 | 0.4273 | 810.4 | 0.7639 | 107.4 | 0.5316 |
| 25 | 287.9 | 0.4250 | 868.0 | 0.7679 | 115.0 | 0.5355 |
| 30 | 299.2 | 0.4232 | 916.9 | 0.7711 | 121.6 | 0.5388 |
| 40 | 317.4 | 0.4203 | 997.4 | 0.7760 | 132.7 | 0.5441 |
| 50 | 331.8 | 0.4180 | 1063.0 | 0.7797 | 142.0 | 0.5483 |
| 75 | 358.8 | 0.4139 | 1189.7 | 0.7863 | 160.4 | 0.5560 |
| 100 | 378.5 | 0.4109 | 1285.8 | 0.7909 | 174.9 | 0.5616 |
| 200 | 428.1 | 0.4037 | 1540.9 | 0.8016 | 215.3 | 0.5754 |

Références

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