Canadian Homogenized Surface Air Temperature (CanHomT) Version 4

(with data up to 2024)

For daily and monthly data of each station, maximum, minimum, and mean temperatures are provided together. A flag follows each variable, marked with an “I” to indicate that the original daily or monthly values were missing and were infilled using ANUSPLIN surface estimates.

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1. Metadata format (Temp\_Stations\_Gen4\_2024\_monthly.csv)

|  |  |
| --- | --- |
| **Variable** | **Definition** |
| ID | Station climate identification number |
| Name | Station name |
| Prov | Province where the station is located |
| Lat | Latitude of the station (in decimal degrees) |
| Lon | Longitude of the station (in decimal degrees) |
| Ele | Elevation of the station (in meters) |
| Beginyear | Starting year of the data |
| Endyear | Most recent year included in the data |

2. Monthly means format (CanHomT\_mlyV4.tar.gz)

The CanHomT\_mlyV4.tar.gz file contains monthly means of the daily maximum (tmax), minimum (tmin) and mean temperatures (tmean) for 651 stations across Canada. For each station file, the data format is as follows:

|  |  |
| --- | --- |
| **Variable** | **Definitions** |
| Year | Year |
| Month | Month |
| tmax | Monthly mean of the daily maximum temperature (in degrees Celsius) |
| tmax\_flag | “I” indicates infilled data for the month for tmax; otherwise, it is blank. |
| tmin | Monthly mean of the daily minimum temperature (in degrees Celsius) |
| tmin\_flag | “I” indicates infilled data for the month for tmin; otherwise, it is blank. |
| tmean (average of tmax and tmin) | Monthly mean of the daily mean temperature (in degrees Celsius) |
| tmean\_flag | “I” indicates infilled data for the month for tmean; otherwise, it is blank. |

Missing values are recorded as NA.

3. Daily data format (CanHomT\_dlyV4.tar.gz)

Similar to the monthly means format (Section 2), this file contains daily data for each station, with records starting from 1949 for all stations.

4. Annual and seasonal means format (CanHomTmax\_seaV4.tar.gz, CanHomTmin\_seaV4.tar.gz, CanHomTmean\_seaV4.tar.gz)

The annual and seasonal means for each variable are calculated from the monthly data for 651 stations across Canada. For each station file, the data format is as follows:

|  |  |
| --- | --- |
| **Variable** | **Definitions** |
| year | Year |
| annual | Annual mean |
| winter | DJF mean (December of the previous year, January and February of the current year) |
| spring | MAM mean (March-May) |
| summer | JJA mean (June-August) |
| autumn | SON mean (September-November) |

Temperatures are in degrees Celsius. Missing values are recorded as NA.

5. Contact

Questions and feedback can be sent to: dccah-ahccd@ec.gc.ca