

## **GHCN\_Annual Data Documentation**

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### **Data Description:**

There are two climate variables presented in GHCN\_Annual:

Annual Precip (Precipitation)	with units of mm
MAT (Mean Annual Temperature)	with units of °C

GHCN\_Annual is based on original GHCN\_Daily dataset with values for mean annual temperature and total precipitation being directly calculated per year for each station. Values for Annual Precip were found by summing all non-missing, reported values for daily precipitation within a given year in the dataset GHCN\_Daily, and values for MAT were found by taking the mean of all daily mean temperatures. Daily mean temperatures were found by averaging the daily maximum and minimum temperatures reported in GHCN\_Daily. Since mean daily temperatures were taken as the mean of the two daily extreme temperatures, then if either the daily maximum or minimum temperature was missing the daily mean temperature was said to also be missing. Within GHCN\_Daily missing values are reported with the value 9999, and since the two climate variables presented within GHCN\_Annual are an annual sum and an annual mean, three additional columns are included with each variable in GHCN\_Annual:

#### **For Annual Precipitation:**

Number of days reporting a value of 0 precipitation,	P=0
Number of days without a precipitation value recorded	P=999.9
Number of days with positive precipitation values	P>0
(Not including values of 999.9)	

#### **For MAT:**

Number of days without a mean temperature reported	tmean=999.9
Number of days reporting a value of 0°C	tmean=0
Number of days reporting nonzero values	tmean=non 0

To clarify, the sum of these three values would yield the total number of reported days within the given year. For example, the ALYESKA station for the year 1972 reports 264 days with 0 precipitation, 12 days with missing precipitation values, and 90 days with positive precipitation, which sums to 366 days. Note that 1972 was a leap year.

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