

Precipitation correction

Rain gauges cause turbulence that tends to reduce the amount of precipitation collected. Therefore station data need to be corrected. Deficiencies of 10 % or rain and up to 50 % of snow can occur. The correction factor K accounts for these losses.

Unshielded gage

$$K_{\text{usg}} = 100 \cdot \exp^{(-4.605 + 0.062 \cdot v_a^{0.58})}$$

where

v_a = wind speed in [m/s]

At zero wind speed the effect is negligible and can amount to about 80% at high speeds. For snow the effect is much stronger. The estimation equation reads:

$$K_{\text{usgs}} = 100 \cdot \exp^{(-4.606 + 0.157 \cdot v_a^{1.28})}$$

From:

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Last update: **2024/04/10 10:02**

