

APPROACH TO TEMPERATURE CALIBRATION/CHECK:

"HIPPO" Dataset: Numerous climbs and descents, "pole-to-pole"

- Assume a polynomial correction to T_t expressed in Celsius::

$$T_t = f(T_m) = T_m + a_0 + a_1 T_m + a_2 T_m^2$$

$$\chi^2 = (\Delta h - \Delta z_{GPS})^2$$

where Δh is the height difference predicted from the hydrostatic equation:

$$\Delta h = -\frac{R_a}{g} \ln \frac{p_i}{p_{i-1}} (f(T_m) + T_0)$$

- Find the coefficients that minimize this χ^2 over the 25 flights and >300 climbs or descents from HIPPO circuits 4 and 5.