Variable abbreviations:

mslp: mean sea level pressure in hPa

mat\_corr: mean annual temperature in ºC corrected to sea level

mat: mean annual temperature in ºC

pstar: mean surface pressure in hPa

orography: elevation in m

atmos\_temp\_500: temperature at 500 hPa

atmos\_height\_500: height of the 500 hPa isobar

2 options from Nat’s code:

1. **AtmoERATrace6G lines 75-105:** Input the sea level pressure (mslp) and temperature (mat\_corr) plus the sample site elevation (user input, not from the model) into the standard atmosphere equation, assume a lapse rate (Nat uses either 0.0065 or an equation with 6 constants that accounts for site latitude only)
2. **AtmoERATrace6G lines 110-140:** Use the sample site pressure (pstar), temperature (mat), and model elevation (orography), plus the height and temperature of the 500 hPa isobar (atmos\_height\_500 and atmos\_temp\_500) to calculate the time-varying lapse rate. Then use this lapse rate and the site-specific pressure (pstar) and temperature (mat) and the difference between the sample site elevation (user input) and the model elevation (orograophy) to calculate pressure at site.