

- 8) Hakim & Patoux state (Box 2.2, p.24) that a “good rule of thumb is that pressure decreases by about 8 hPa (mb) every 60 m of elevation with each 60 m gain in altitude (at low elevation). But what does “at elevation” mean? Let’s explore how robust the “rule of thumb” adjustment of H&P is for higher elevation sites.
- a) Station pressures at Tucson International Airport (KTUS), at an elevation of 806 m, have an average value of 917 hPa in July and 924 hPa in January. What would be the pressure at KTUS if adjusted to SLP using a correction of 8 hPa per 60 m? Remember to include units of pressure with your answers. (Answer: 1024.5 hPa in July; 1031.4 hPa in January.)
- b) The answers that you get using an adjustment of 8 hPa every 60 m should be significantly higher than the actual averages of SLP at KTUS where the value is close to 1010 hPa in July and 1017 hPa in January. Use these actual values of SLP to derive an adjustment factor that would be more appropriate for KTUS. (Answer: 6.923 hPa every 60 m.)
- c) Station pressures at Denver International Airport (KDEN at an elevation of 1655 m) range from an average near 838 hPa in January to near 832 hPa in July. The average SLP at KDEN is close to 1018 hPa in January and 1012 hPa July. Use these actual averages of SLP to derive an adjustment factor that would be more appropriate for KDEN. (Answer: 6.256 hPa every 60 m.)
- d) I recommend using an easy to remember adjustment of 1 hPa every 10 m (i.e. 6 hPa every 60 m) elevation gain. Based on your answers, which “rule of thumb” do you believe is most accurate?