

Exercise No. 3 – Line shape

1. Choose an individual line and perform calculations over a restricted frequency range for a number of different pressures. Keep the temperature and constituent mixing ratio constant.

Questions:

- How does the shape of the spectral lines change?
 - How does the absorption coefficient in the line centre change, if pressure is changed?
2. A measure of the line width is the full-width at half maximum. Make a plot of this as a function of altitude (pressure). Do this for a microwave line and an infrared line.