# A Radiation Course based upon Numerical Methods

08.12.2016

# 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?

1. 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.