Tutorial 4

Isobaric processes

1. Dew point temperature.

   Plot the dew point depression, $T - T_d$, as a function of temperature, T, for different values of relative humidity.

   Plot the relative humidity as a function of dew point depression for different values of temperature.

2. Wet bulb temperature.

   Calculate the wet bulb temperature for a given temperature and specific humidity (q_v) or relative humidity. Plot wet bulb temperature as a function of temperature for different values of specific humidity (or relative humidity).

3. Isobaric mixing of two undersaturated air masses.

   Calculate the amount of water condensed after an adiabatic and isobaric mixing of undersaturated air masses (ref. slide 28 in thermodynamics_8 lecture).

4. Equivalent potential temperature versus potential equivalent temperature.

   For which values of temperature and pressure the equivalent potential temperature can be approximated by the potential equivalent temperature (ref. slide 24 in thermodynamics_8 lecture).