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How to read a skew-t ln(p) diagram

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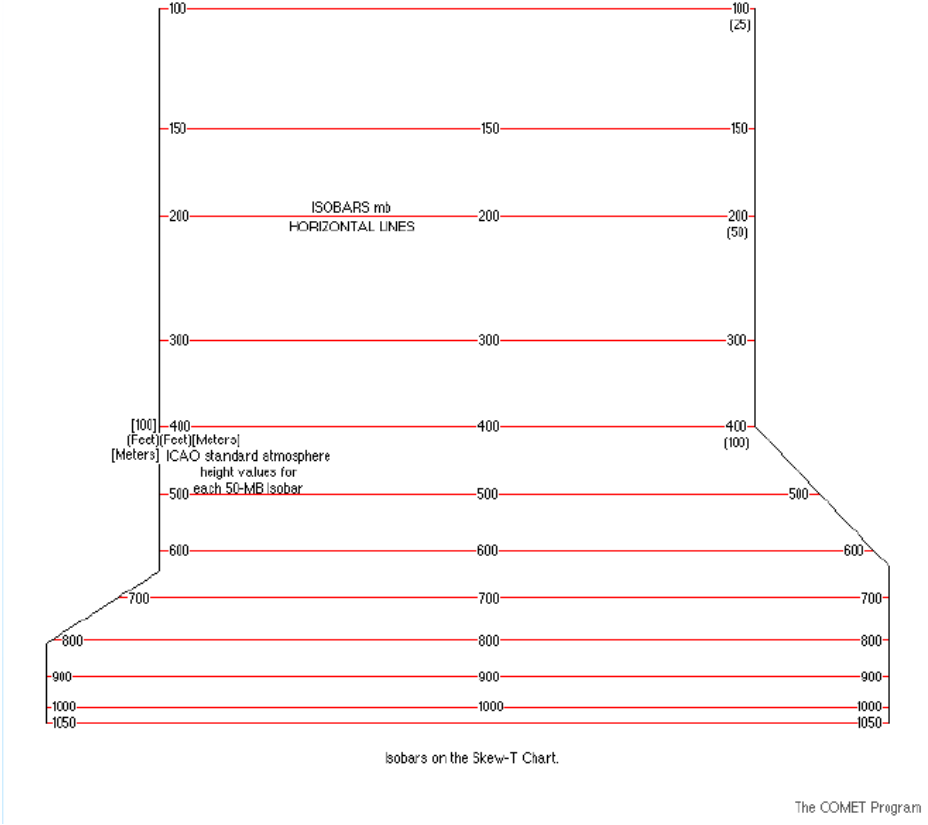
Isobars

- Isobars are shown as horizontal lines in log units (hence the «ln p»)

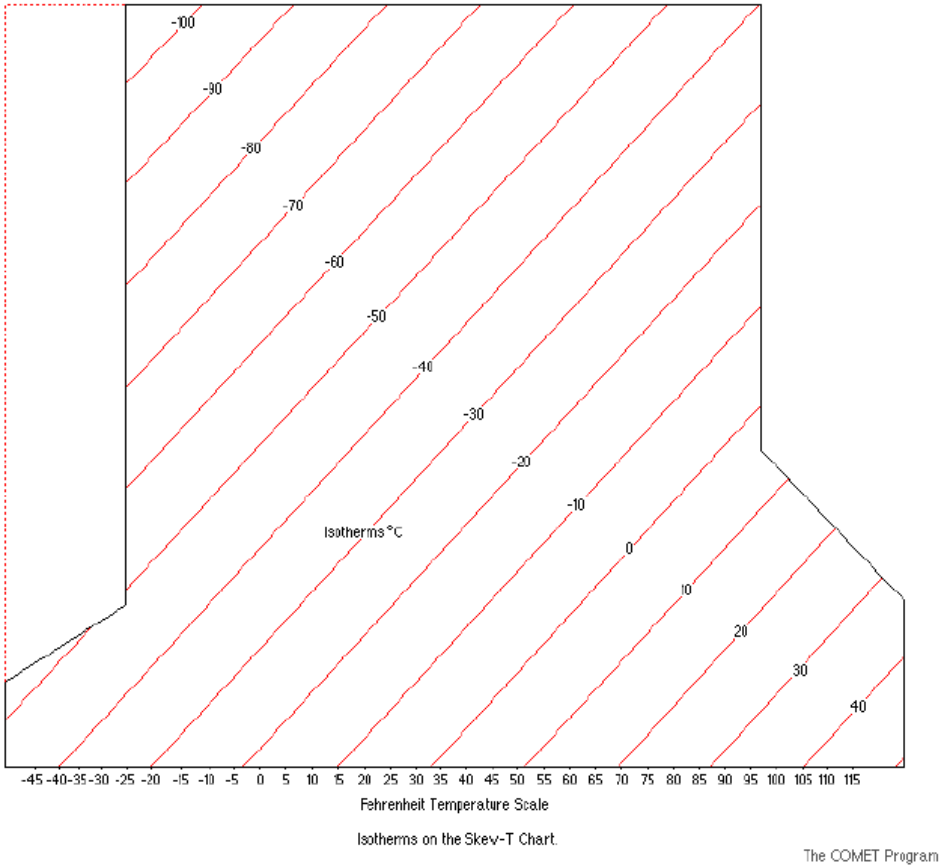
For more information on skew-t lnp diagrams, this e-learning module contains many more information on thermodynamic variables and how to assess them on a skew-t ln(p) diagram: https://learn.meted.ucar.edu/#/online-courses/43c003e8-0c3d-4cba-bfa0-467845c88b40



Isobars on the Skew-T Chart.

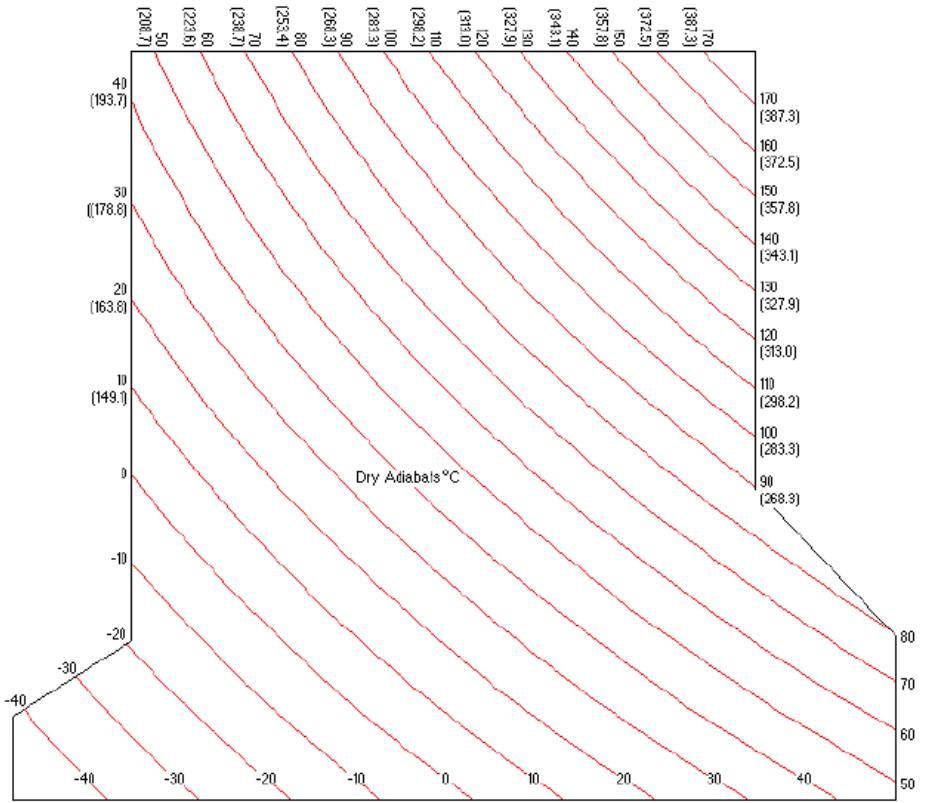
Isotherms

- Isotherms are shown as skewed lines (hence the «skew T»)



Dry adiabatics

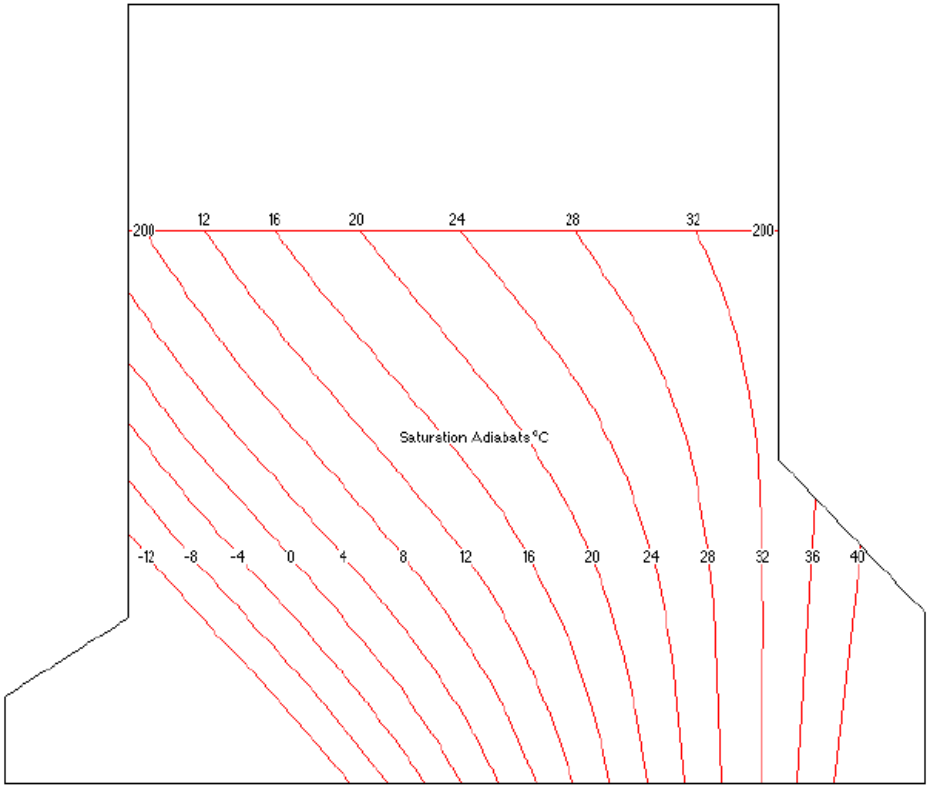
- Dry adiabatics (i.e. potential temperature is constant) shows the decrease of temperature with height for a dry air parcel



Dry Adiabats on the Skew-T Chart.

Moist adiabatics

- Saturated or moist adiabatics shows the decrease of temperature with height for a saturated air parcel (i.e. equivalent potential temperature = constant)
- It is less steep than the dry adiabatics because of the release of latent heat as the air condenses
- Note how the slope of the moist adiabatics change with increasing moisture content (i.e. at higher temperatures) and become almost parallel to dry adiabatics at lower temperatures

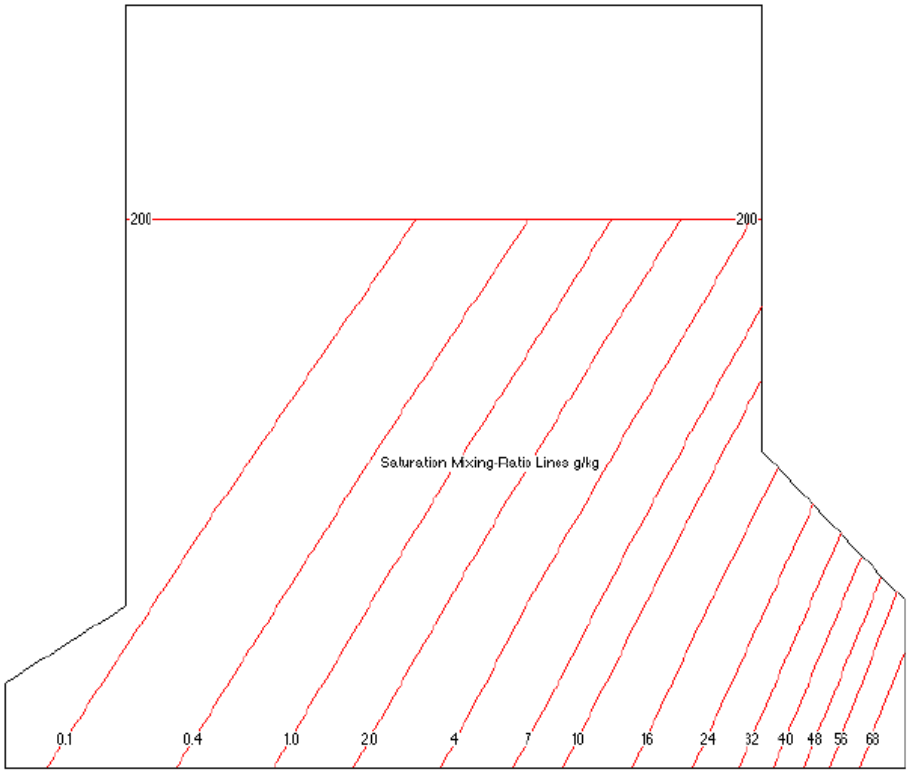


Saturation Adiabats on the Skev-T Chart.

The COMET Program

Saturation mixing ratio

- Useful to determine the mixing ratio from the dew point curve
- Allows to forecast the base of cumulus clouds from dew point measurements at ground level

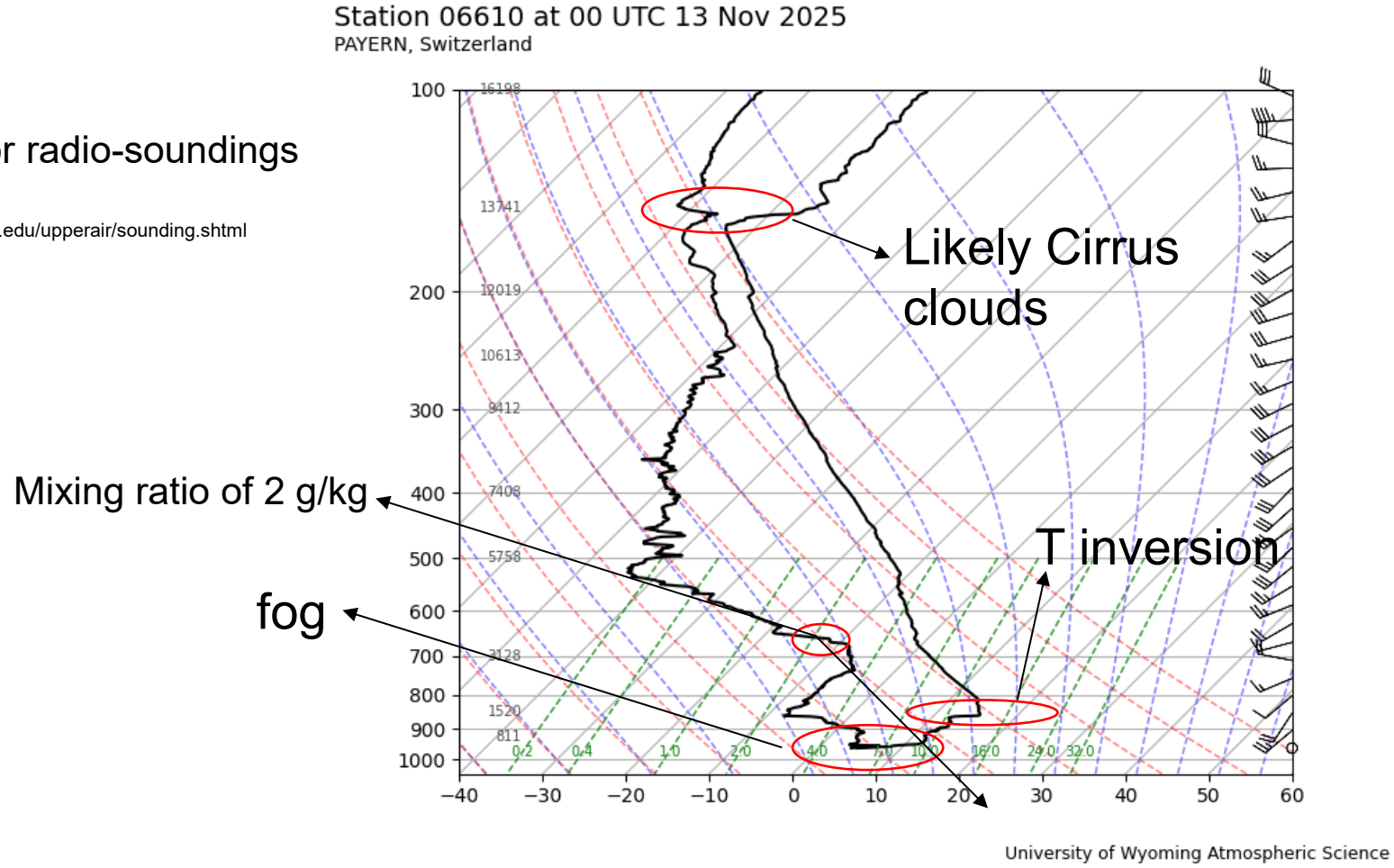


Saturation Mixing-Ratio Lines on the Skew-T Chart.

The COMET Program

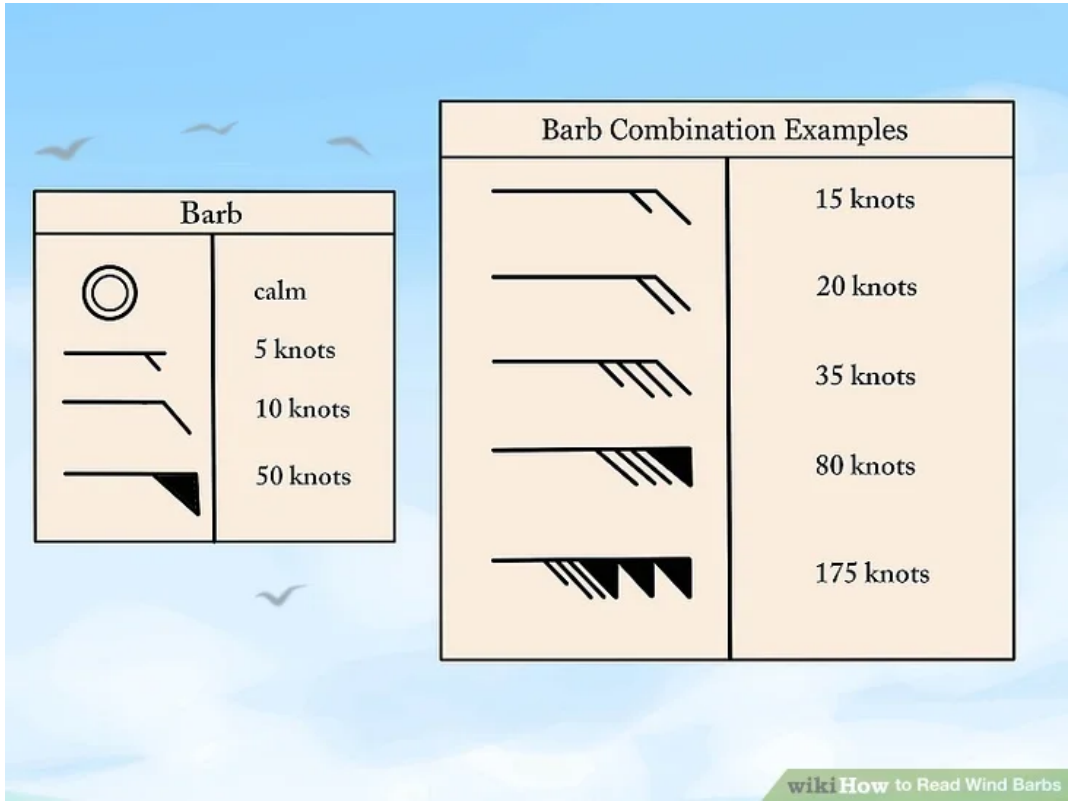
Examples

- Website for radio-soundings worldwide:
  https://weather.uwyo.edu/upperair/sounding.shtml



Wind barbs

- Wind direction = from where the wind comes
- 1 knot ≈ 0.5 m/s ≈ 1.9 km/h



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