

sounding

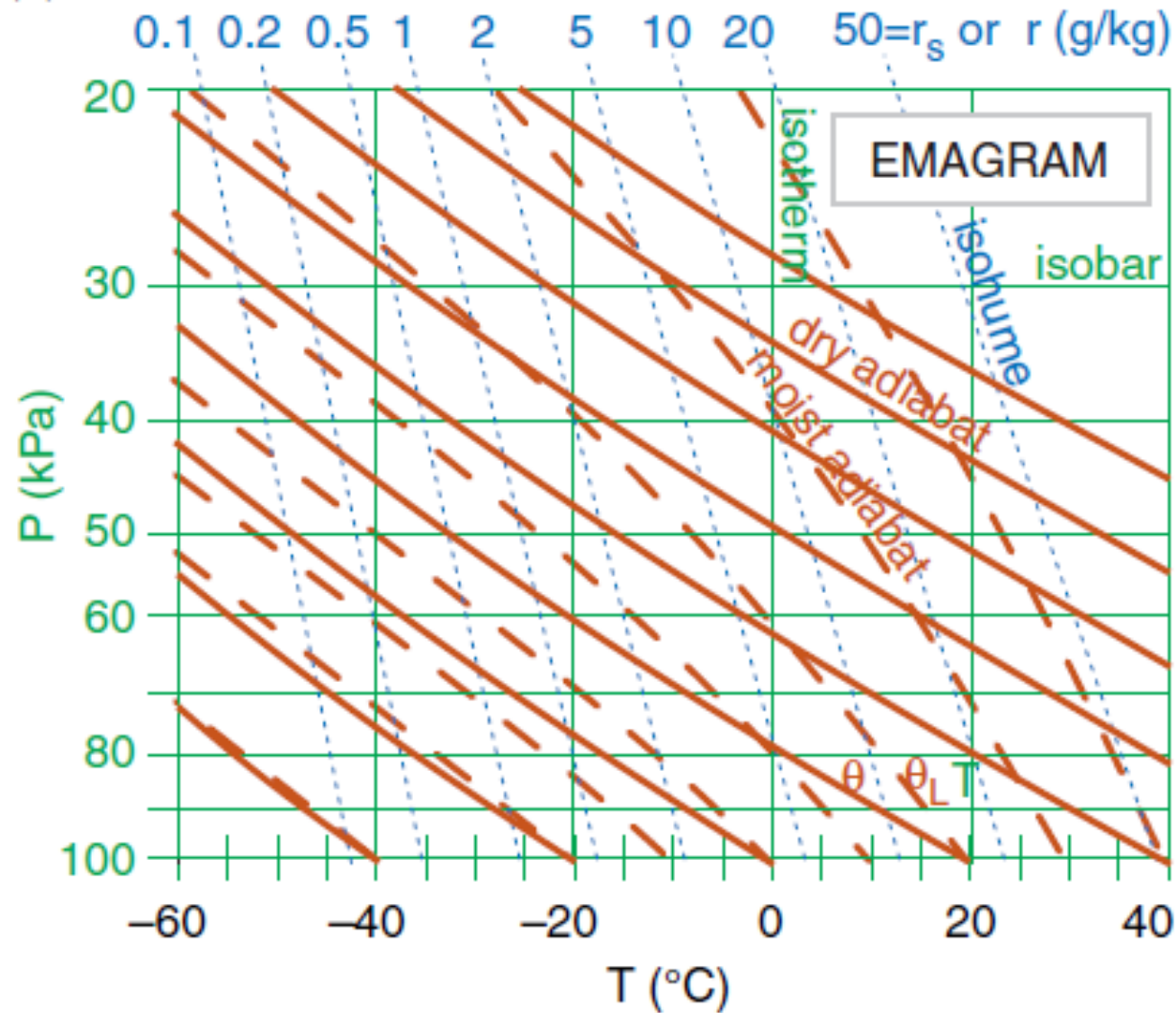
A **sounding** is the vertical profile of temperature and other variables in the atmosphere over one geographic location.

Types Of Thermo Diagrams

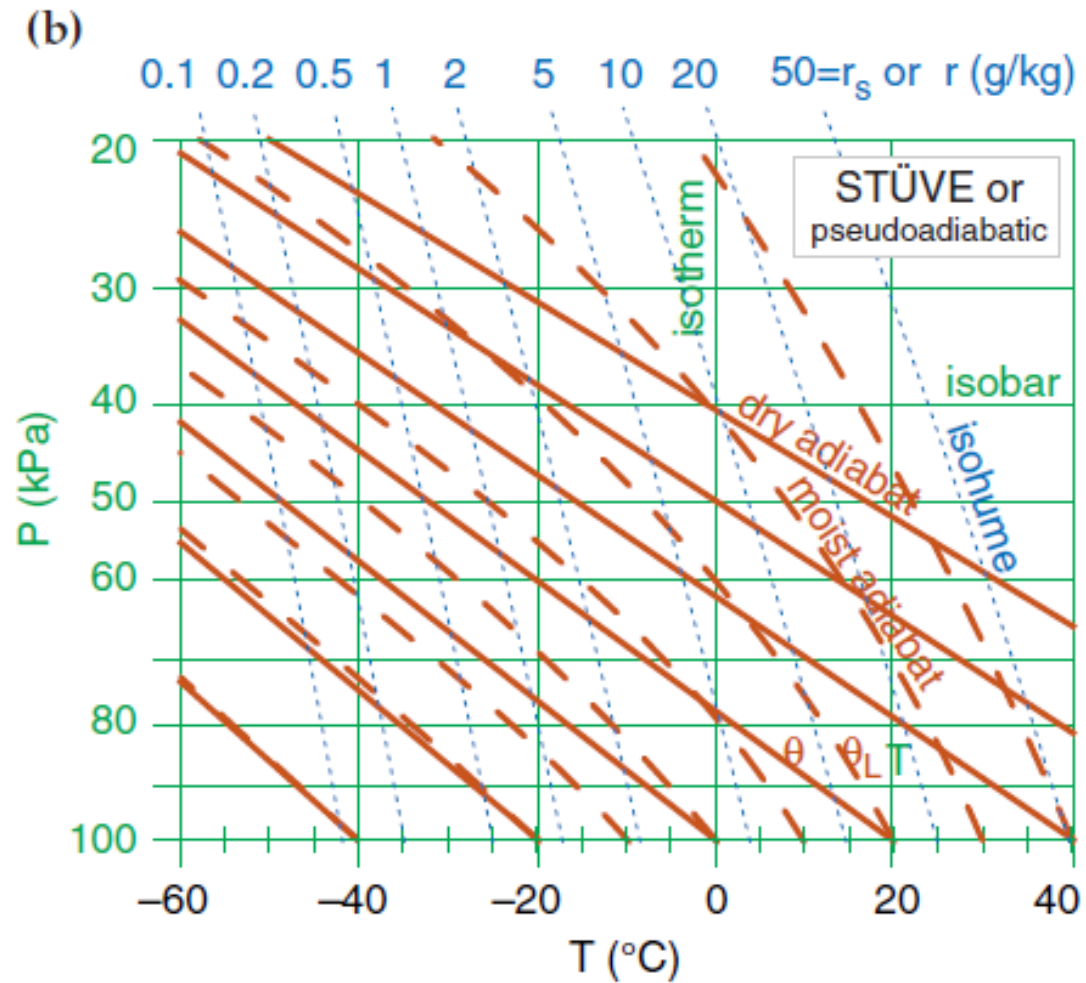
1 - Emagram

“Emagram” is a contraction for “Energy-per-unitmass diagram.”

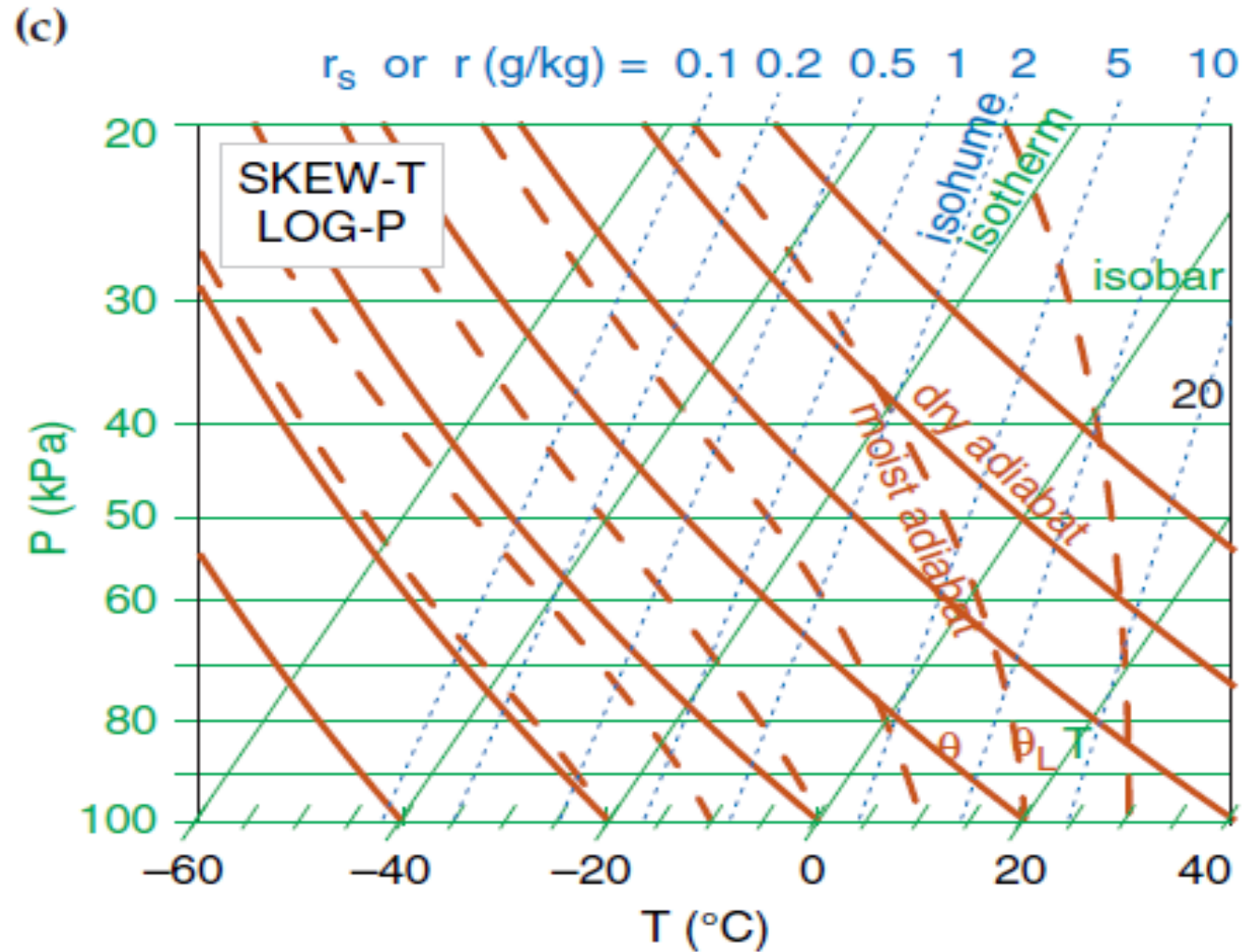
(a)



2 - Stüve & Pseudoadiabatic Diagrams

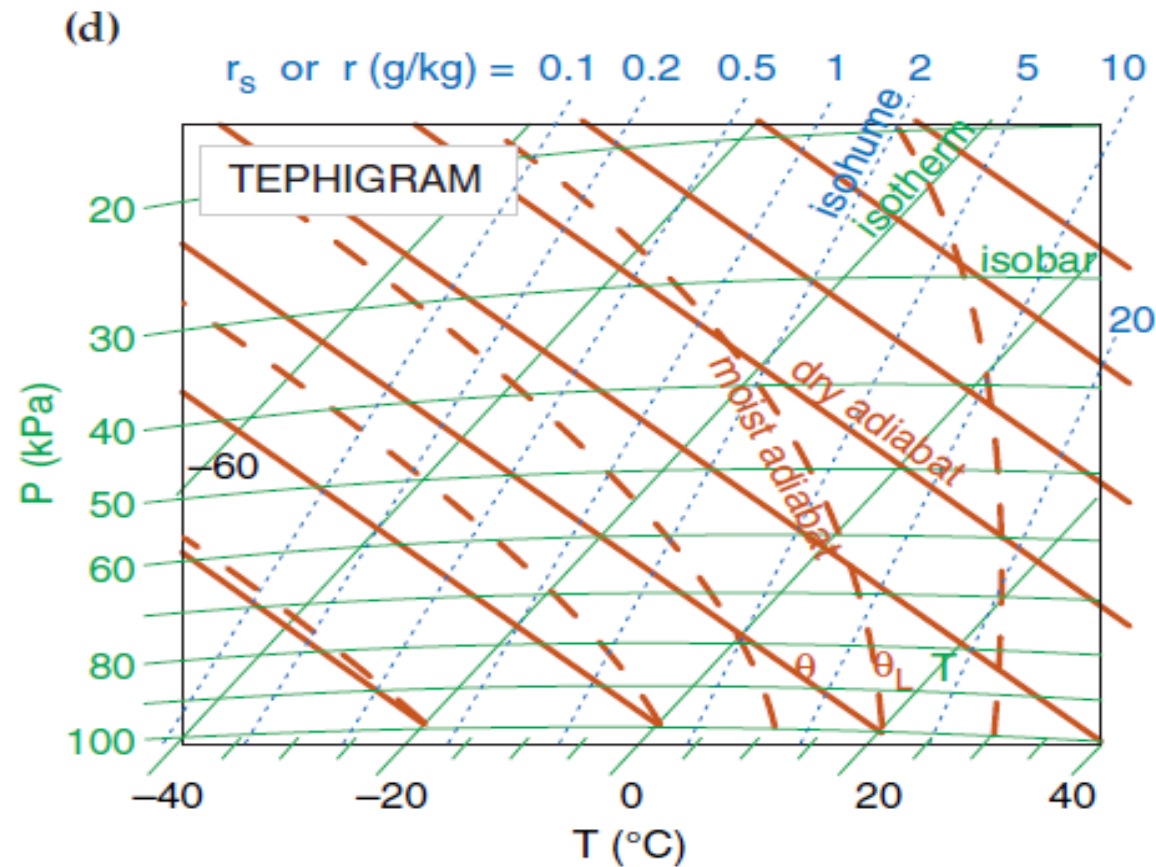


3 - Skew-T Log-P Diagram

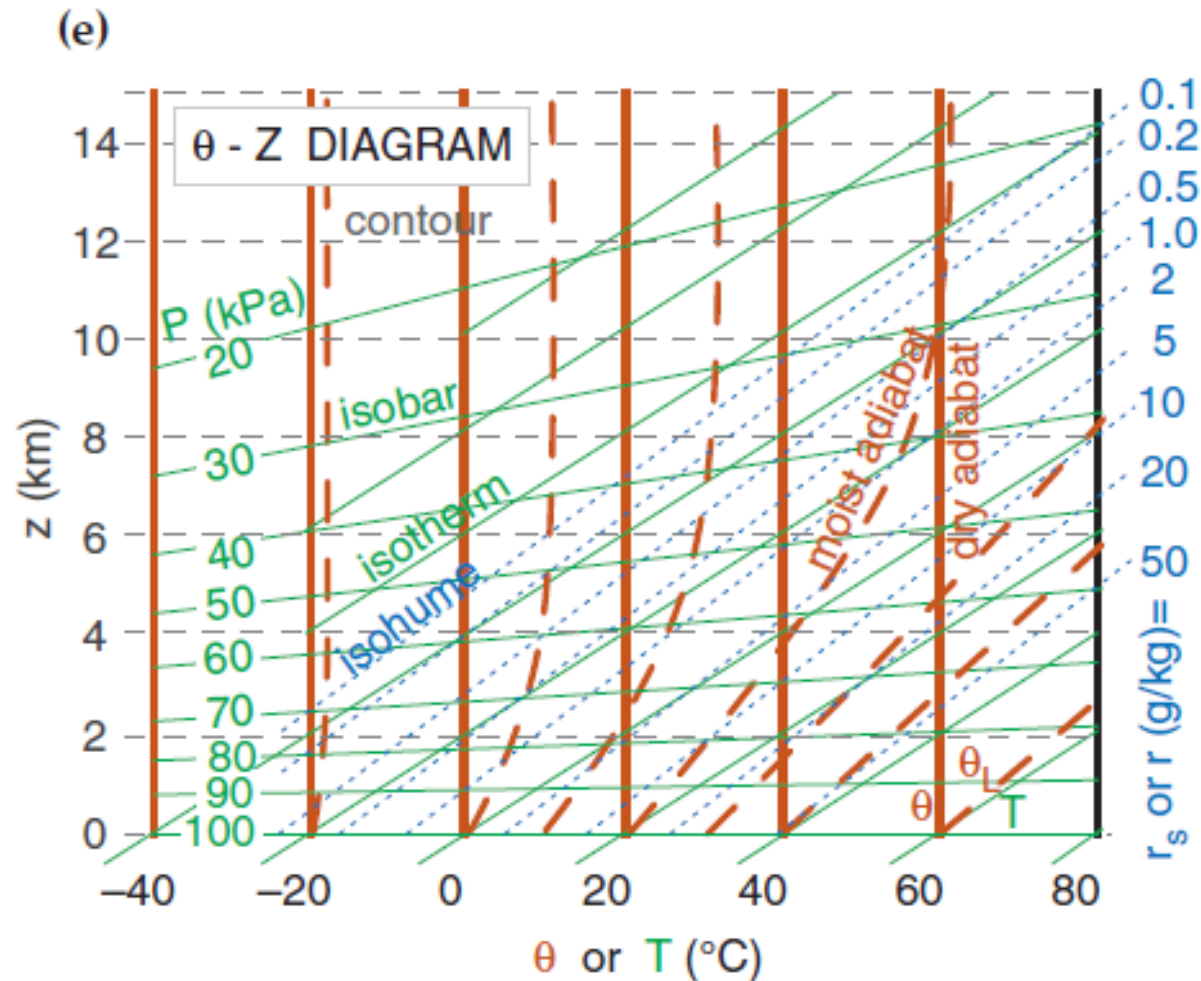


4 - Tephigram

- The name Tephigram is a contraction of Tee T -Phi θ Diagram

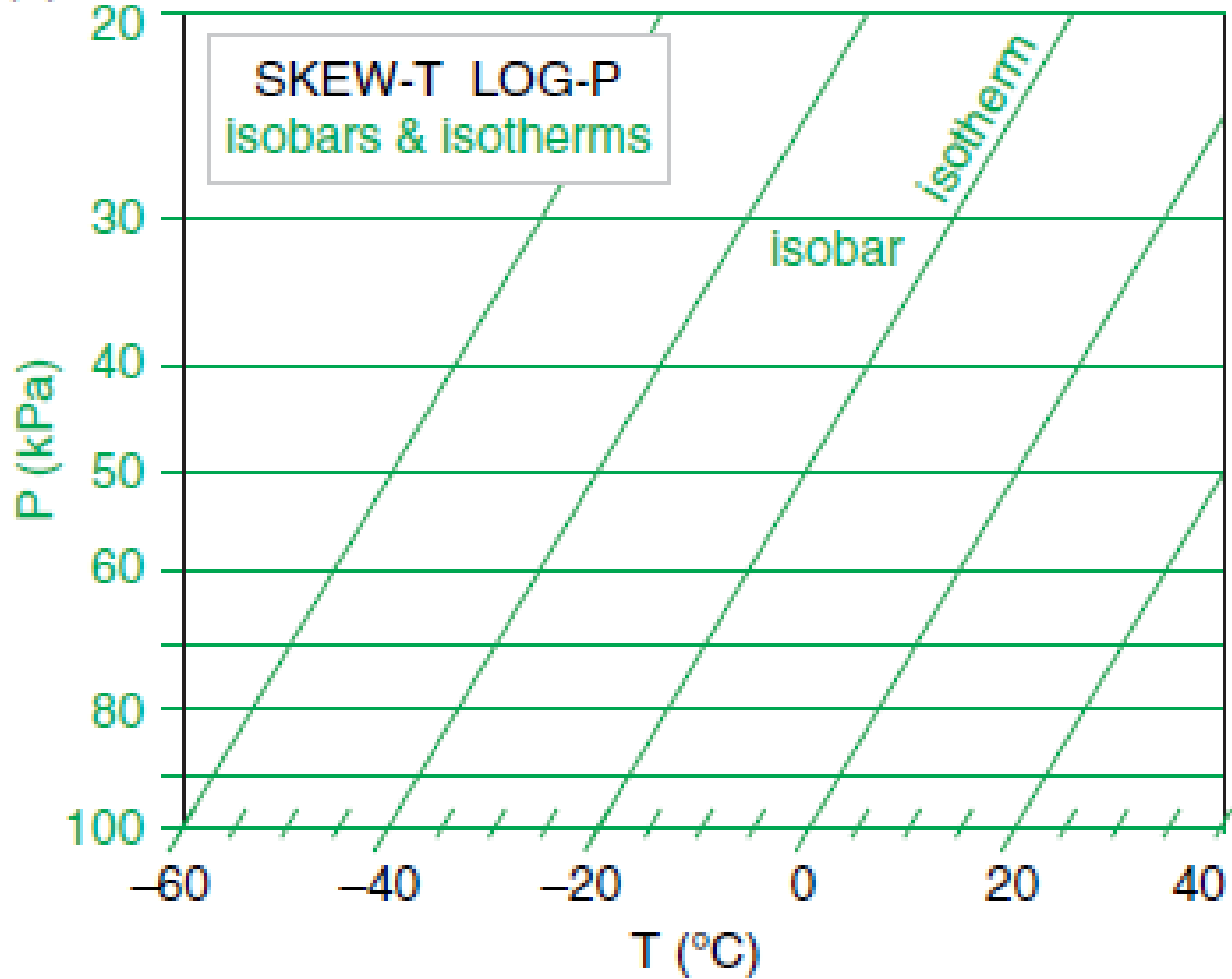


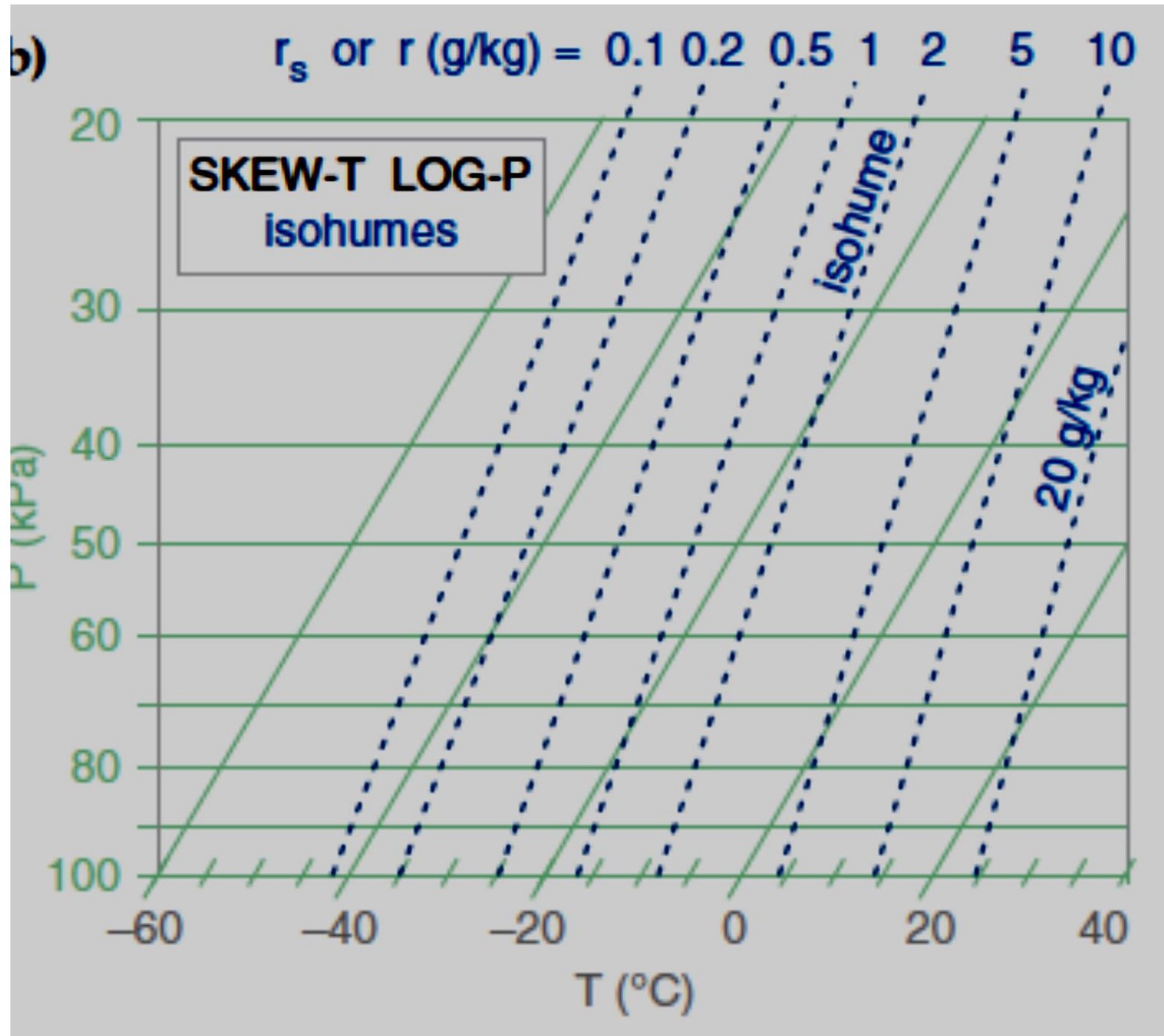
5- Theta-Height (θ -z) Diagrams



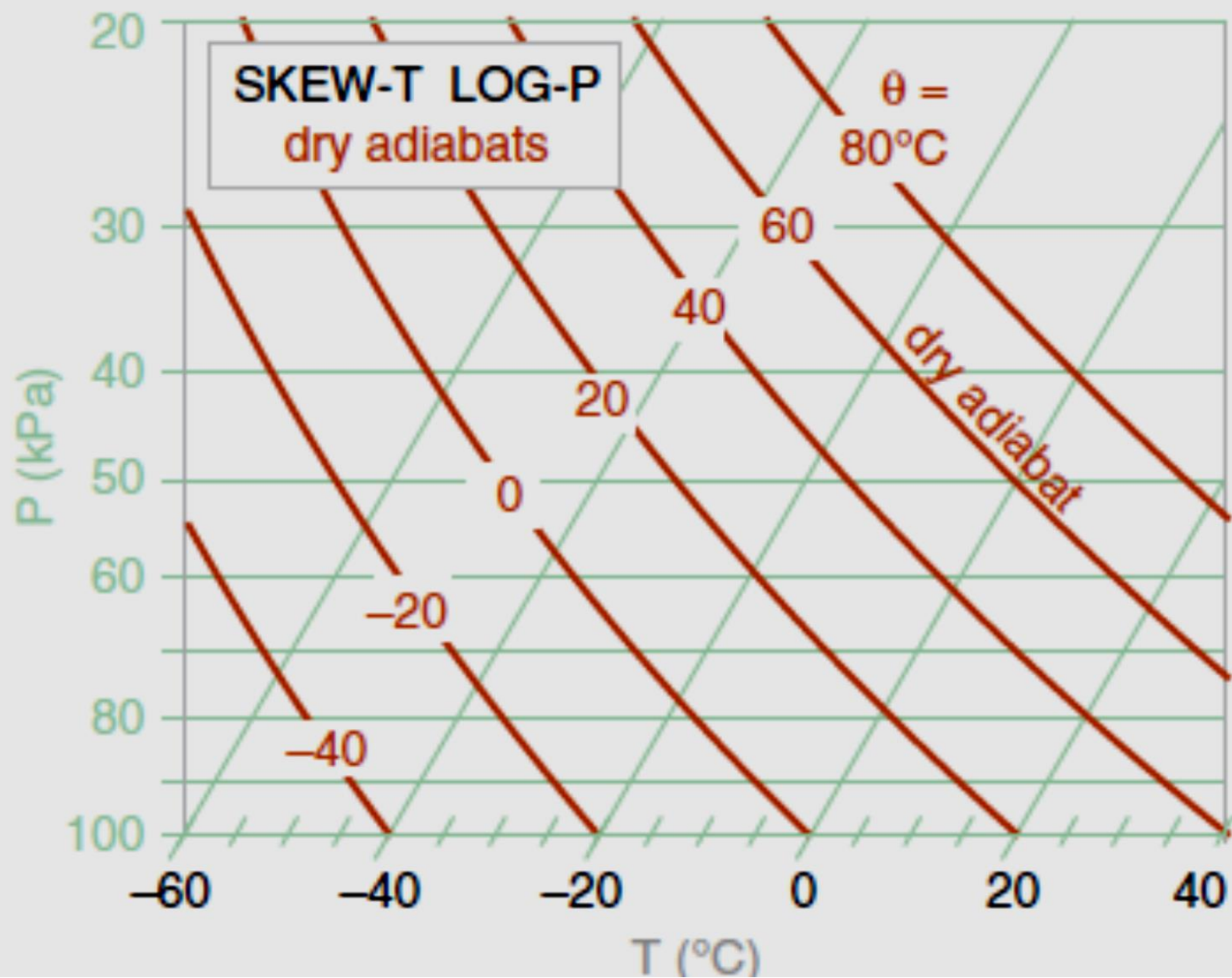
Building a skew-t log p diagram

(a)

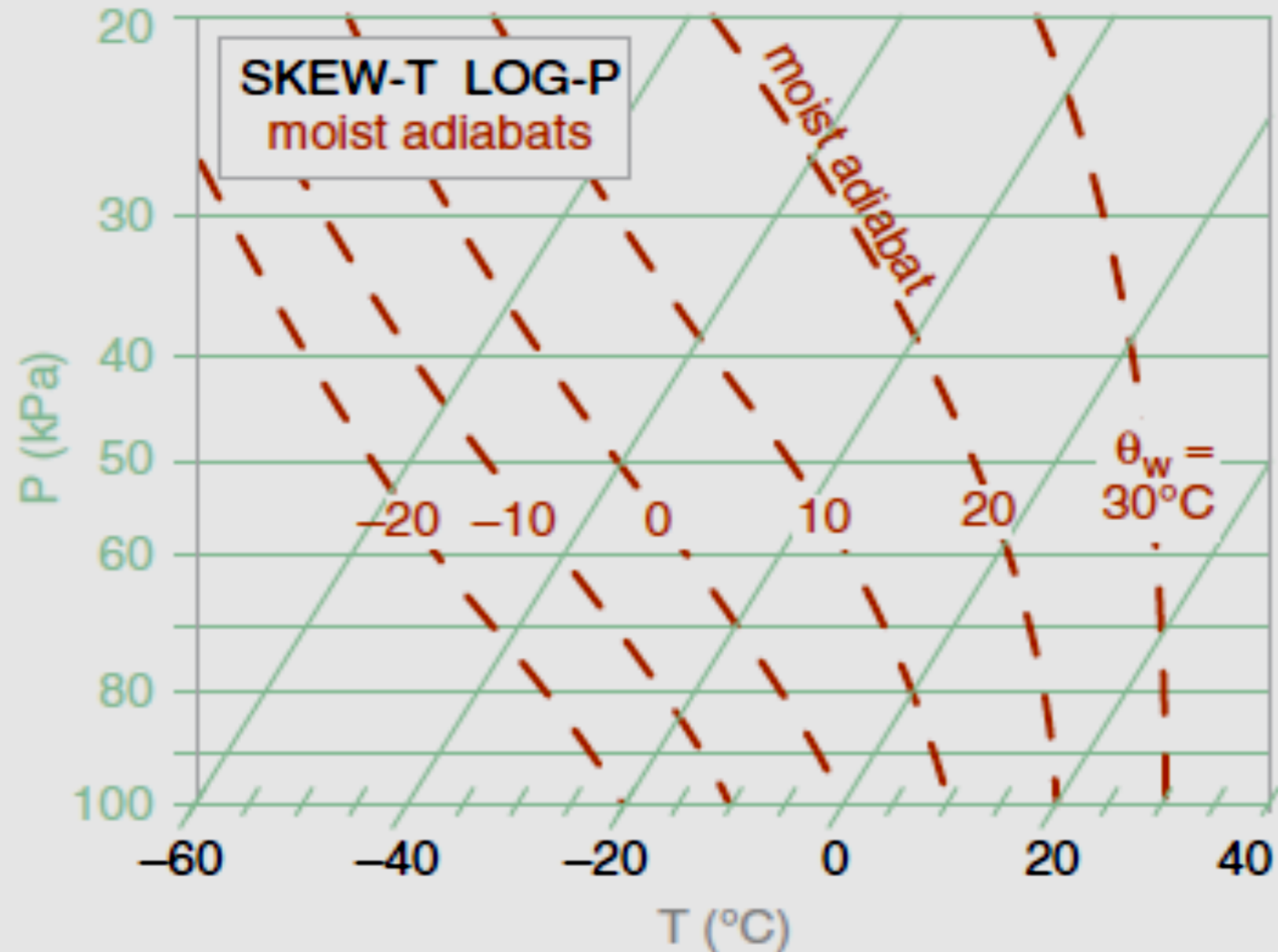


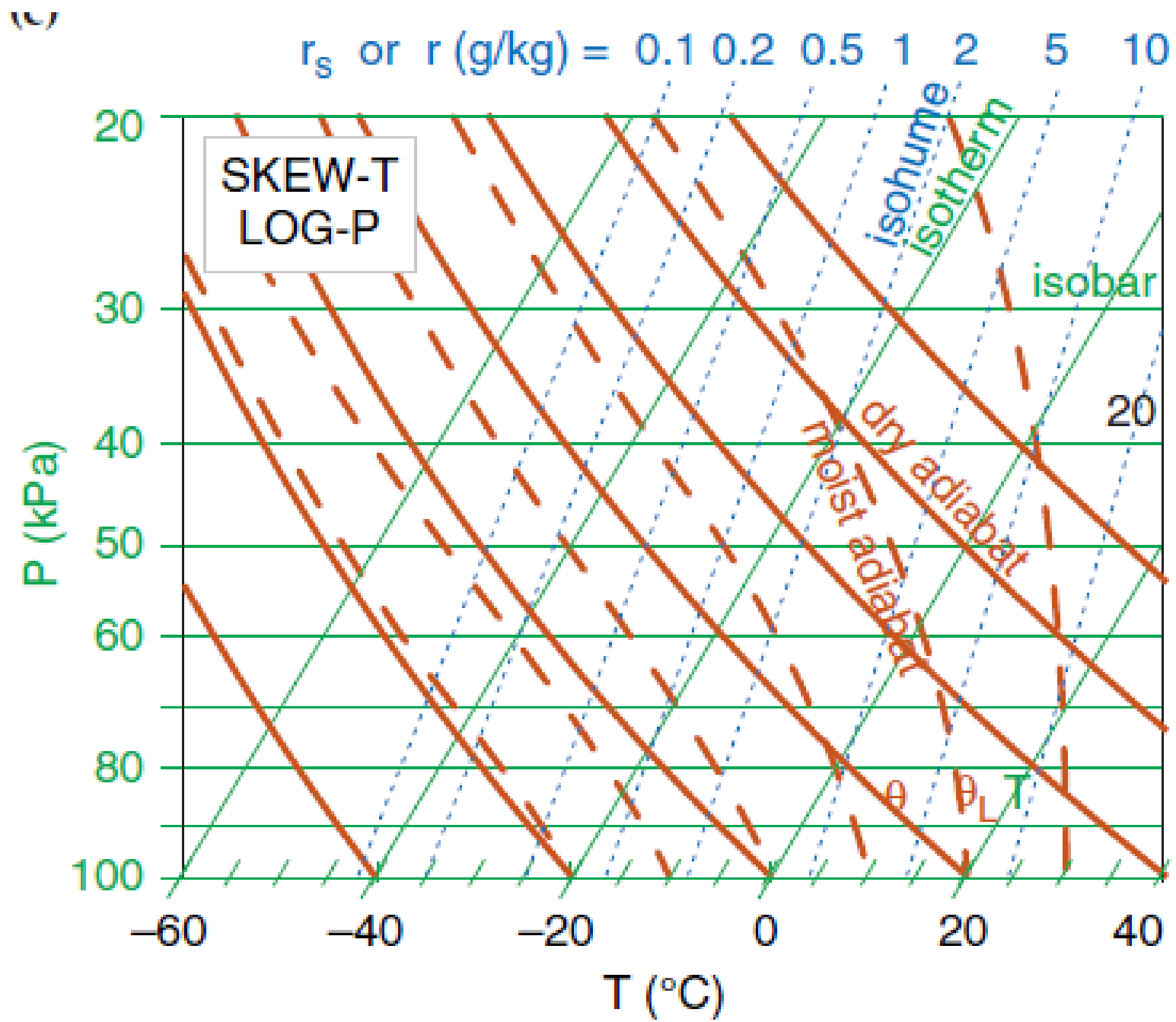


(c)



(d)



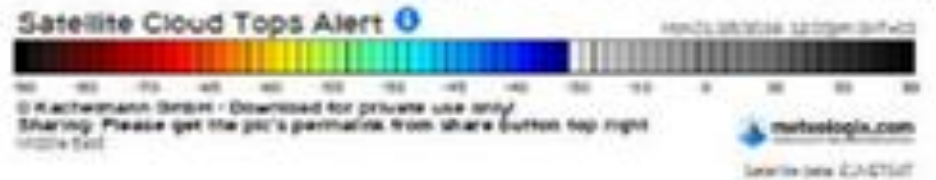
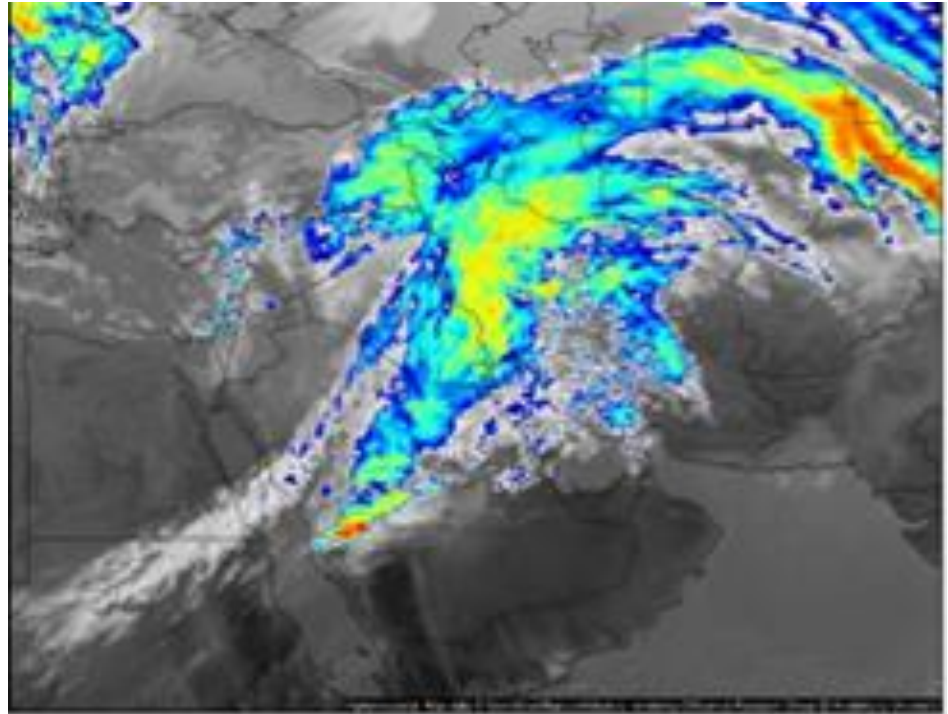
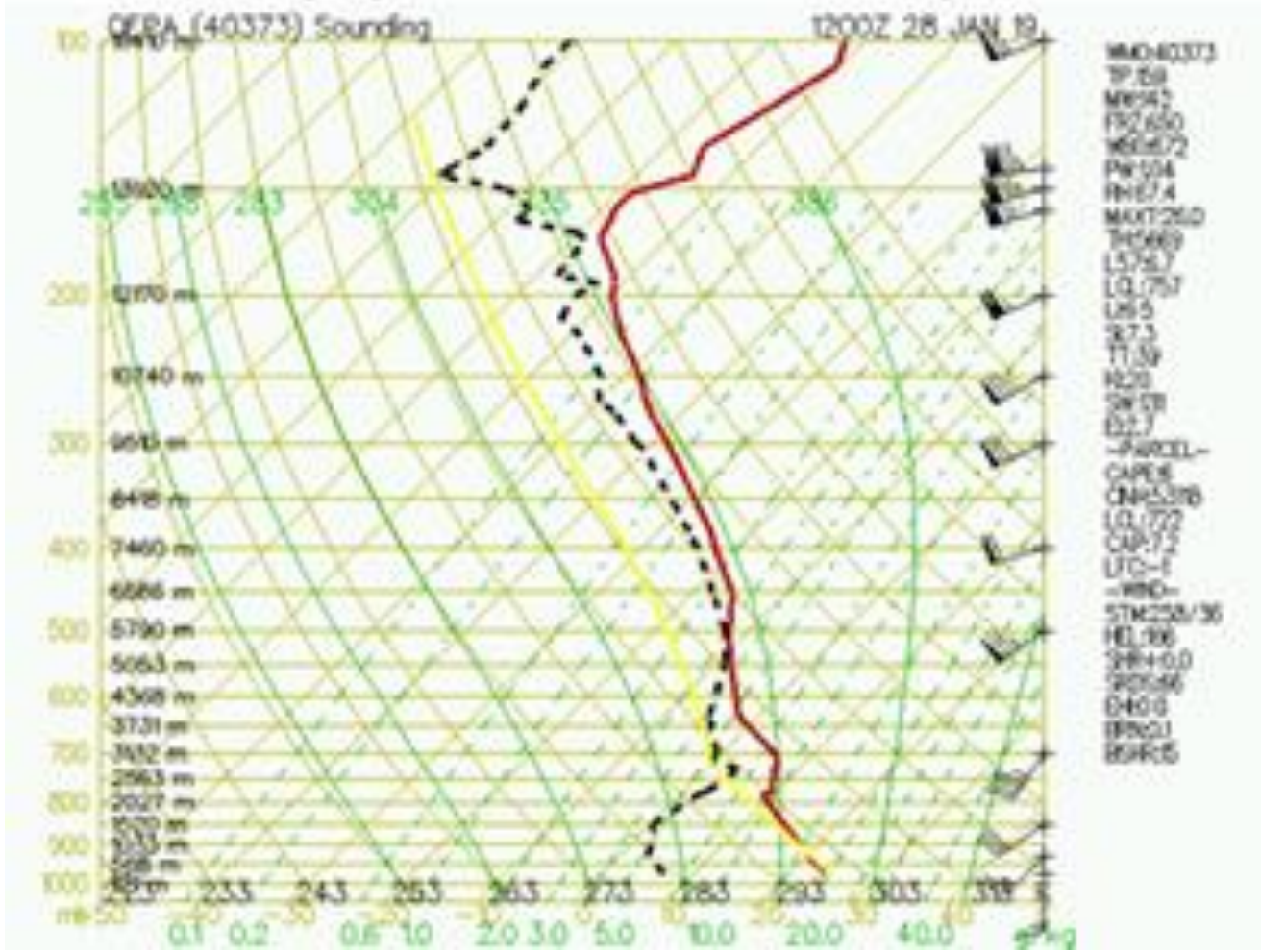


Skew-T Log-P Diagram

- is labeled linearly along the abscissa,
- the isotherms are parallel, straight, diagonal lines tilting upward to the right.
- The Skew-T gets its name because the isotherms are not vertical, but skewed.
- Pressure decreases logarithmically upward along the ordinate,
- and the isobars are parallel, horizontal, straight lines.
- Dry adiabats are diagonal lines slanted up towards the left, with a pronounced curve concave upward.
- Moist adiabats are more sharply curved concave left near the bottom of the diagram, changing to less curved, concave to the right, as they merge

- into the dry adiabats at higher altitudes and colder temperatures.
- Isohumes are almost straight lines, tilting upward to the right.

Plymouth State Weather Center



Sounding variables and indices

- Sfc-Lift cond lev (LCL): 756.58 mb = 2491.08 m = 8172.74 ft T: 8.62 C
- Conv cond level (CCL): 635.58 mb = 3912.45 m = 12835.97 ft
- Conv temperature: 33.61 C = 92.49 F
- Cap Strength: 7.22 C
- Lifted Index: 6.51 C Risk: None
- Lifted Index @300 mb: 11.19 C
- Lifted Index @700 mb: 6.87 C
- Showalter Index: 7.27 C Risk: None
- Total Totals Index: 38.60 C Risk: None
- Vertical Totals Index: 26.30 C
- Cross Totals Index: 12.30 C
- K Index: 20.50 Risk: 20-40 % chance of thunderstorms
- Sweat Index: 131.40 Risk: None
- Energy Index: 2.67 Risk: None
- Parcel Indices
- Parcel: using 100 mb layer
- CAPE (B+): 5.89 J/kg
- Max Up Vert Vel: 3.43 m/s
- Conv Inhibition (B-): 53118.38 J/kg