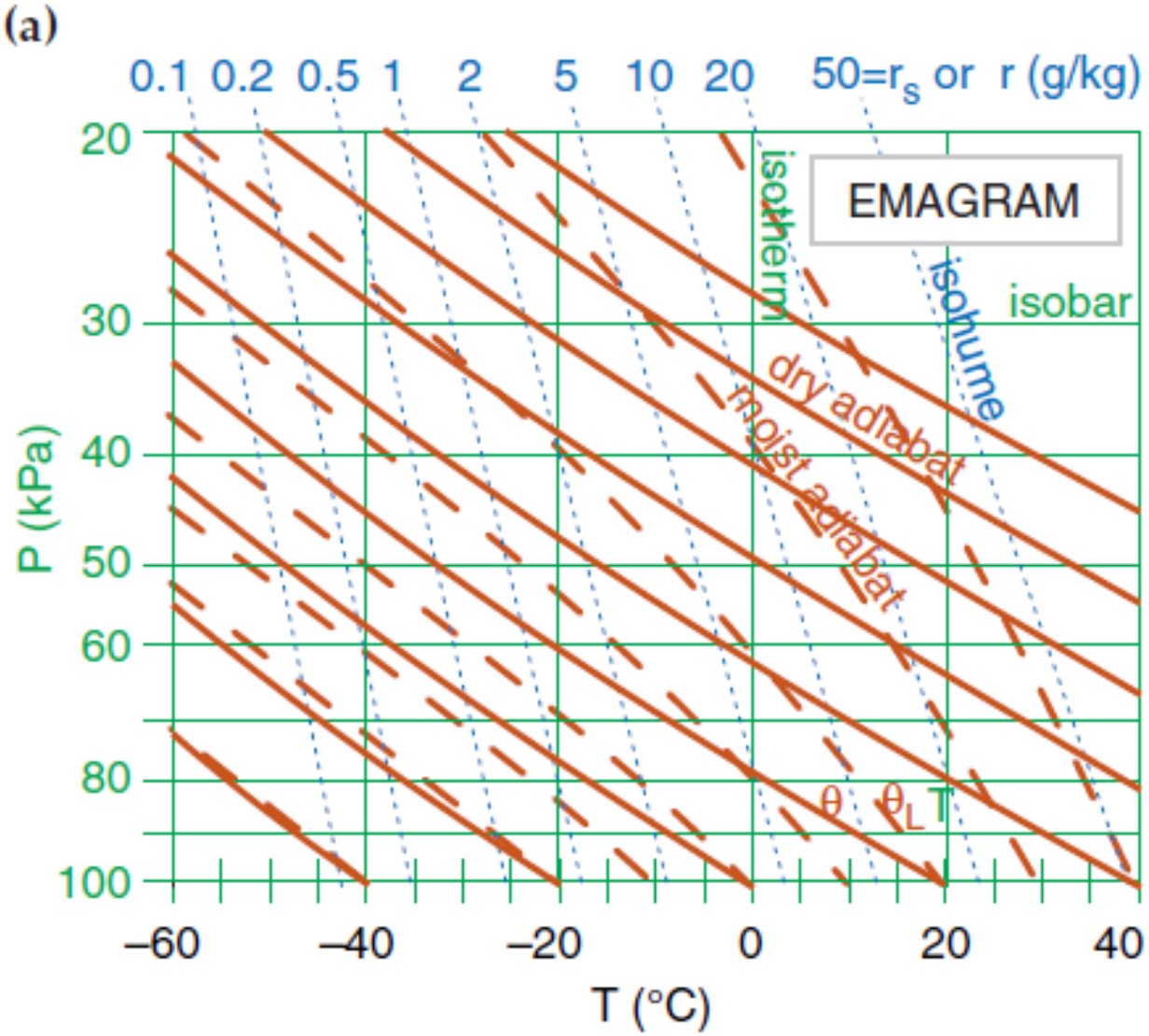
sounding

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

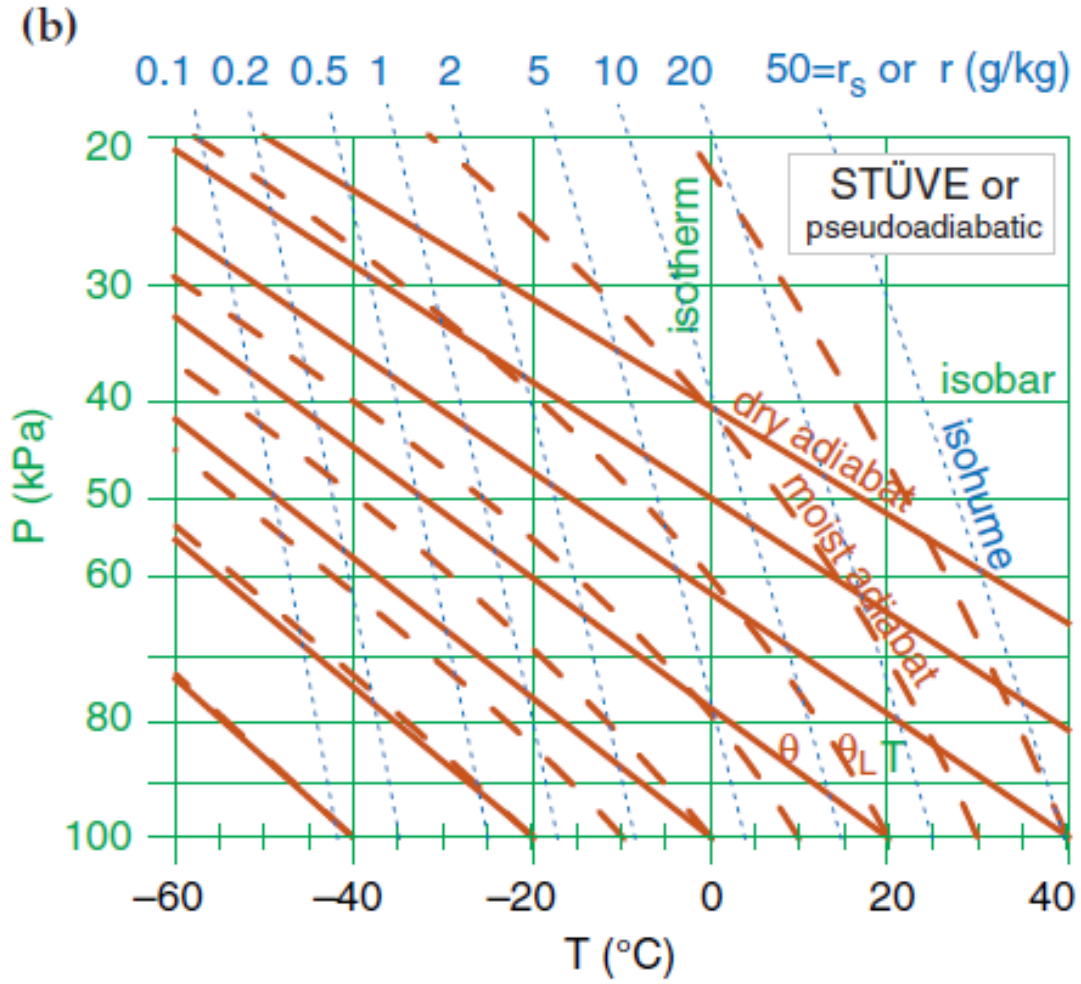
Types Of Thermo Diagrams

1 - **Emagram**

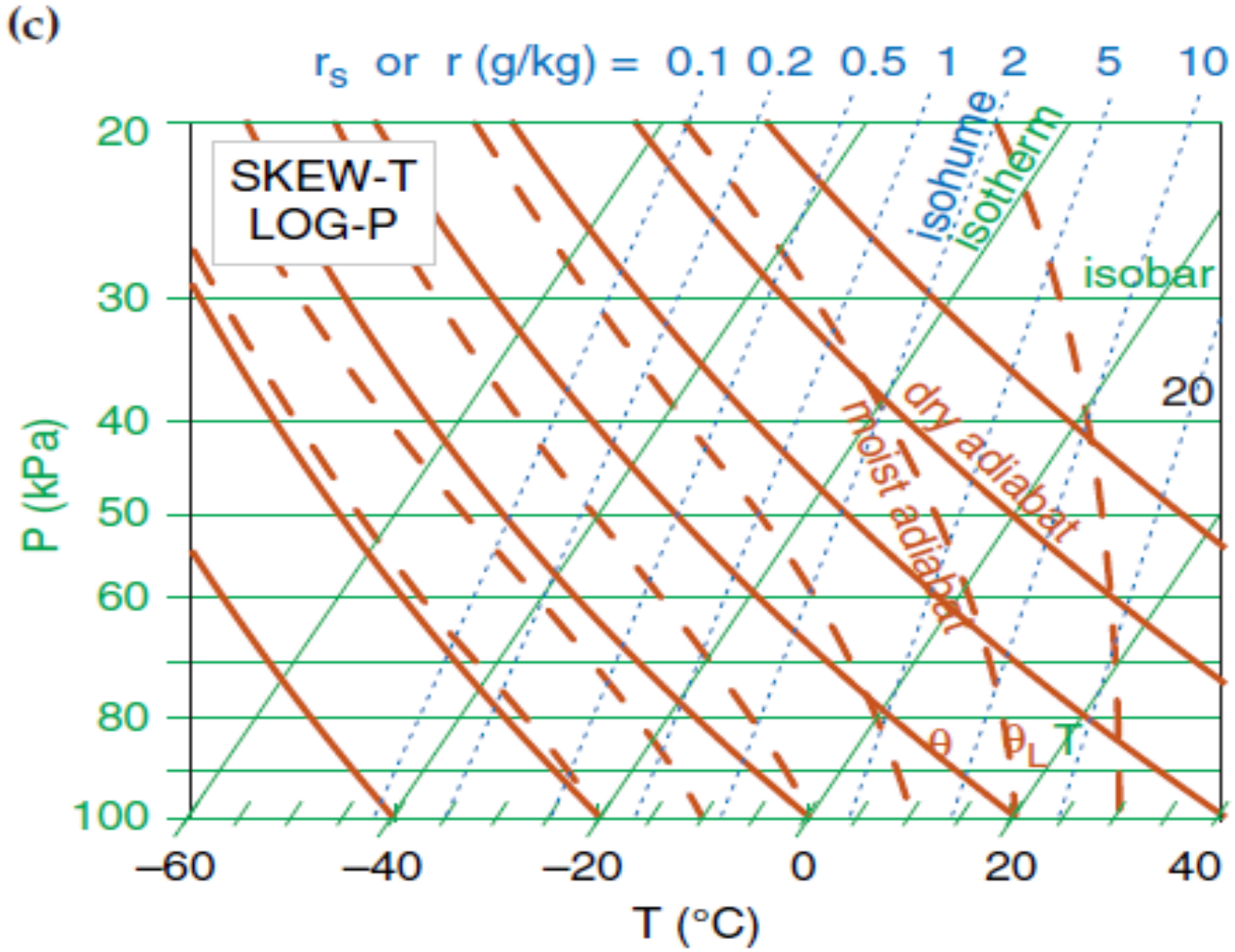
“Emagram” is a contraction for “Energy-per-unitmass diagram.”



2 - **Stüve & Pseudoadiabatic Diagrams**

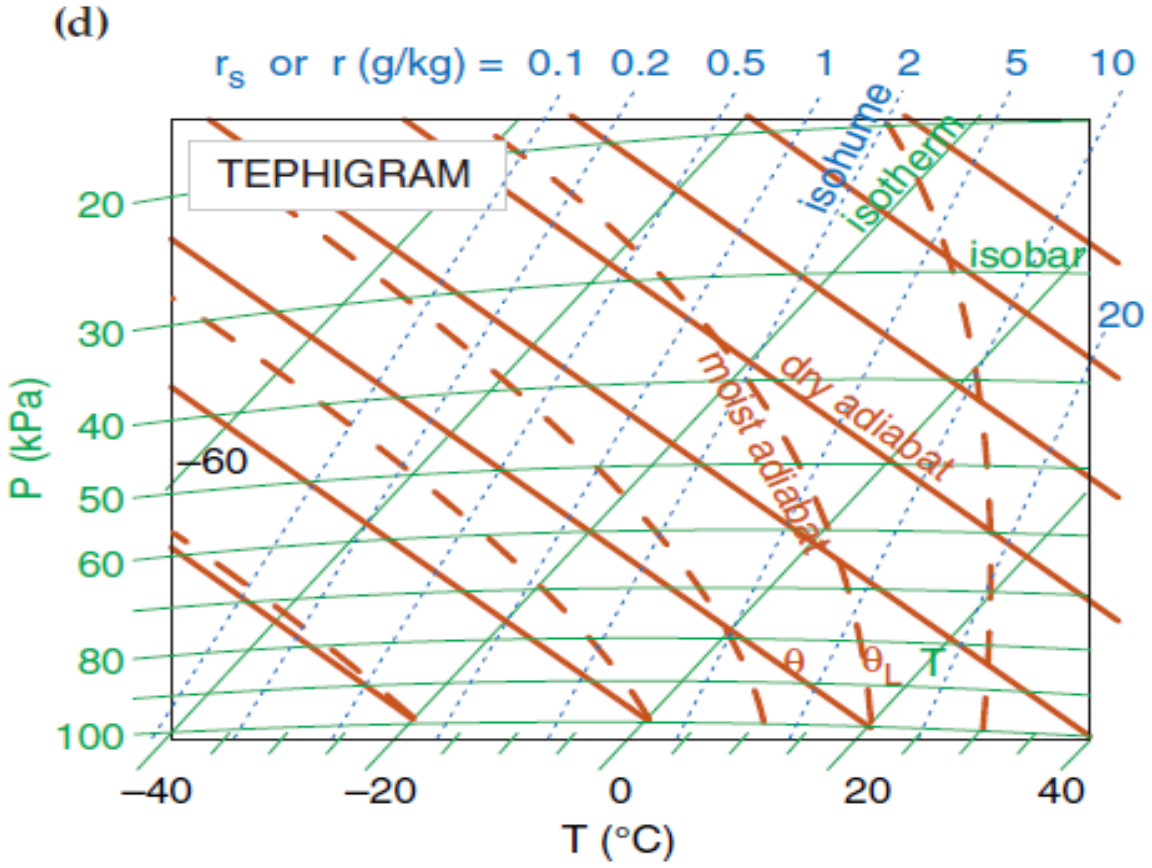


3 - Skew-T Log-P Diagram

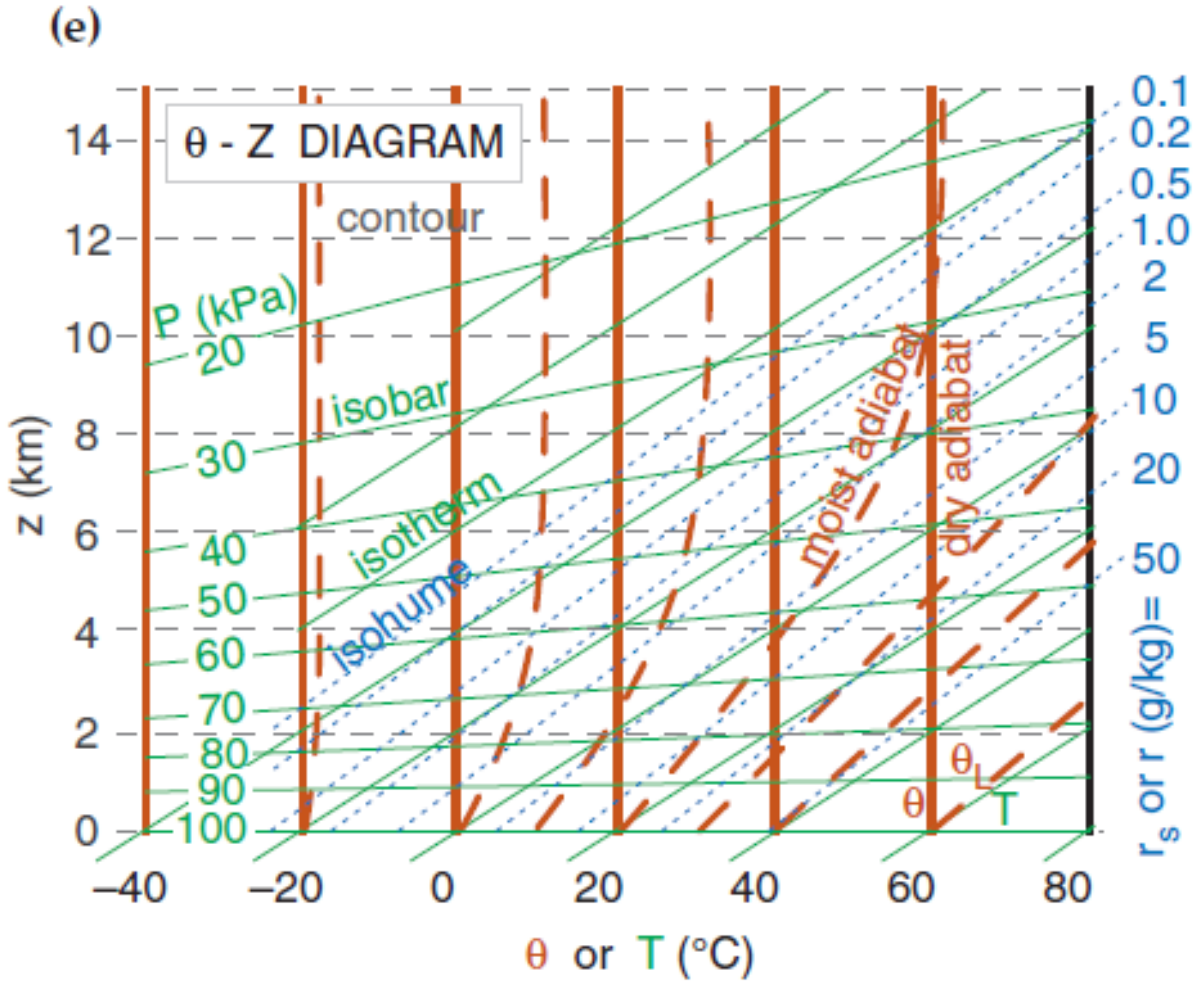


4 - Tephigram

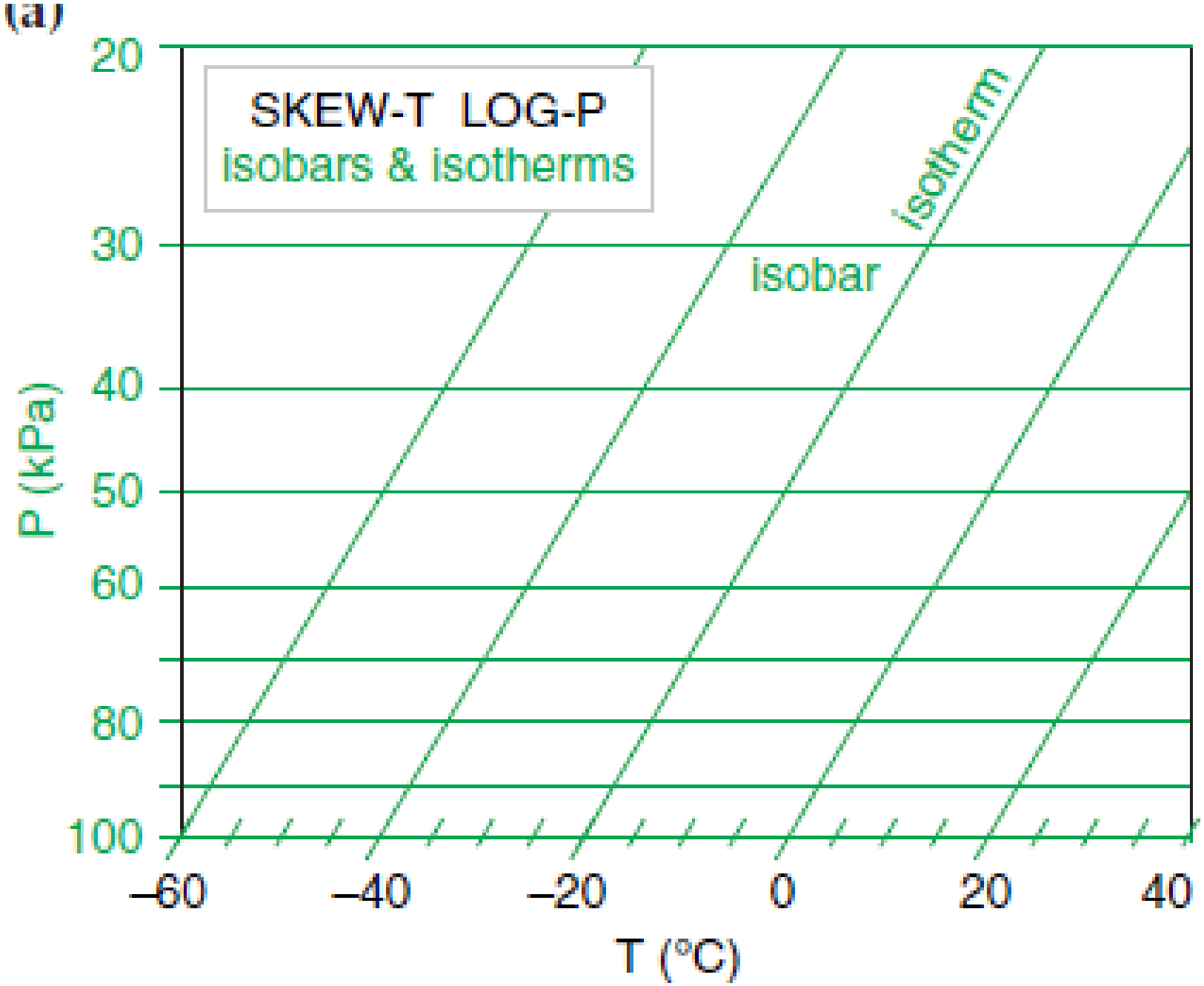
- The name Tephigram is a contraction of Tee T -Phi θ Diagram

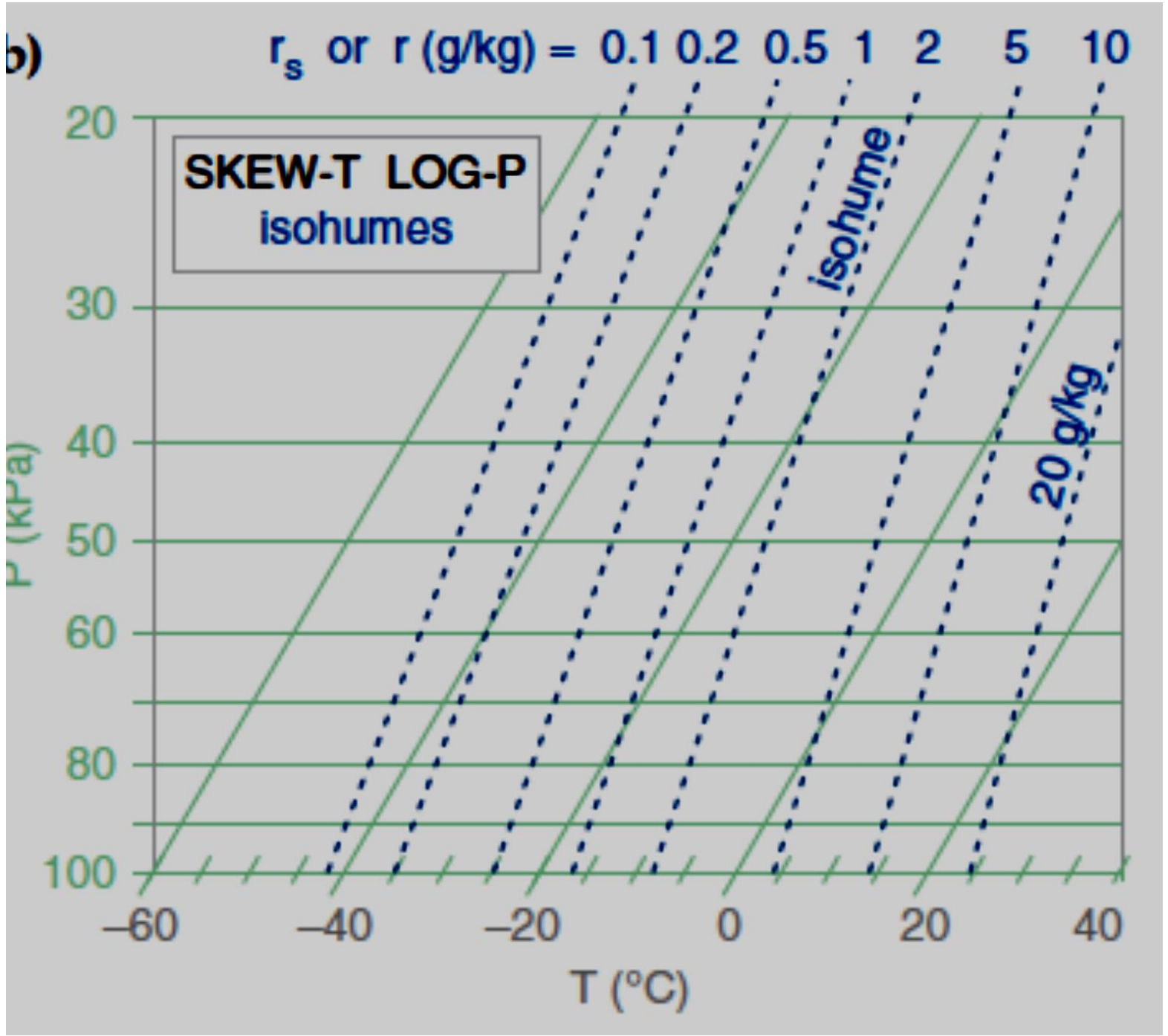


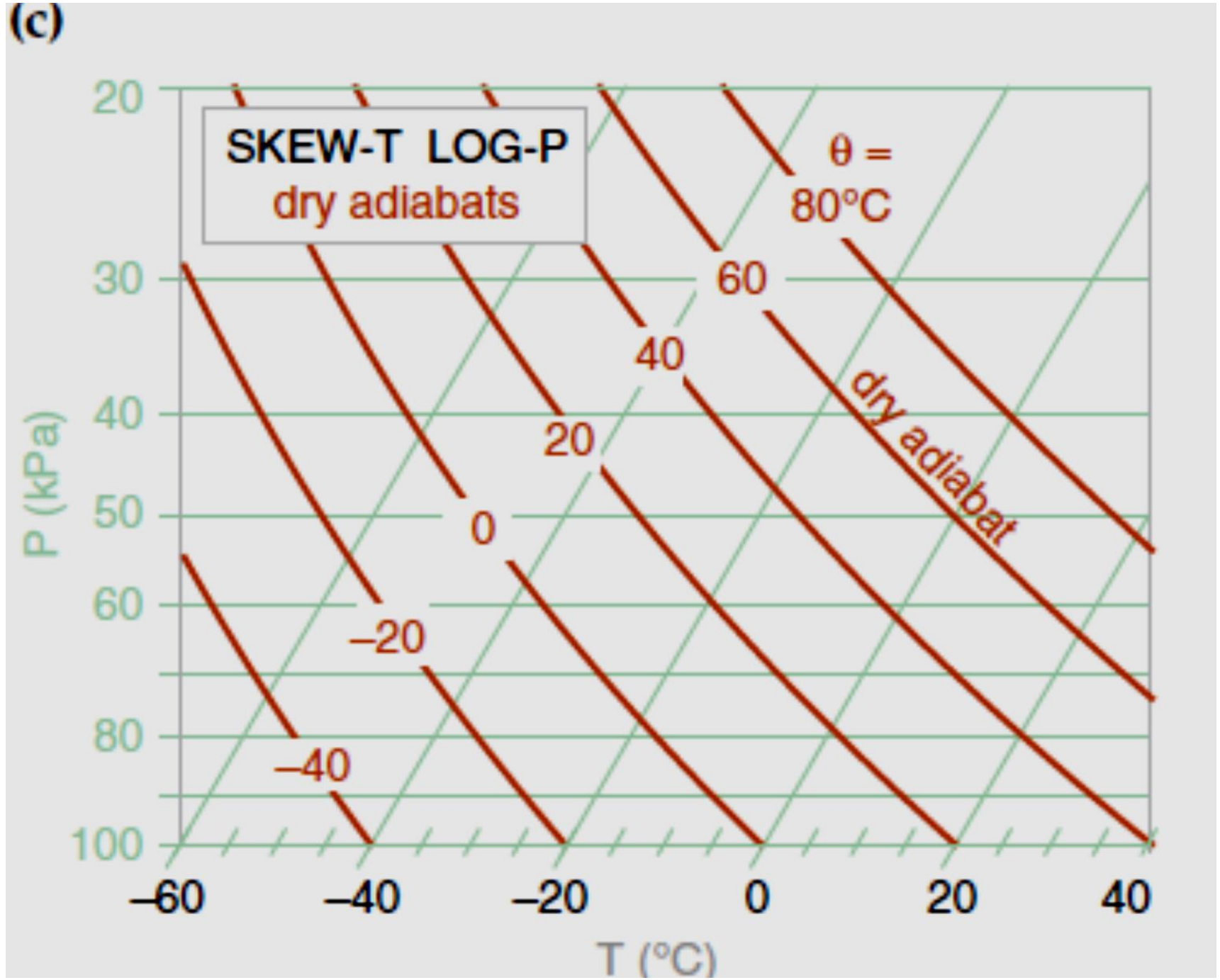
5- **Theta-Height (θ-z) Diagrams**

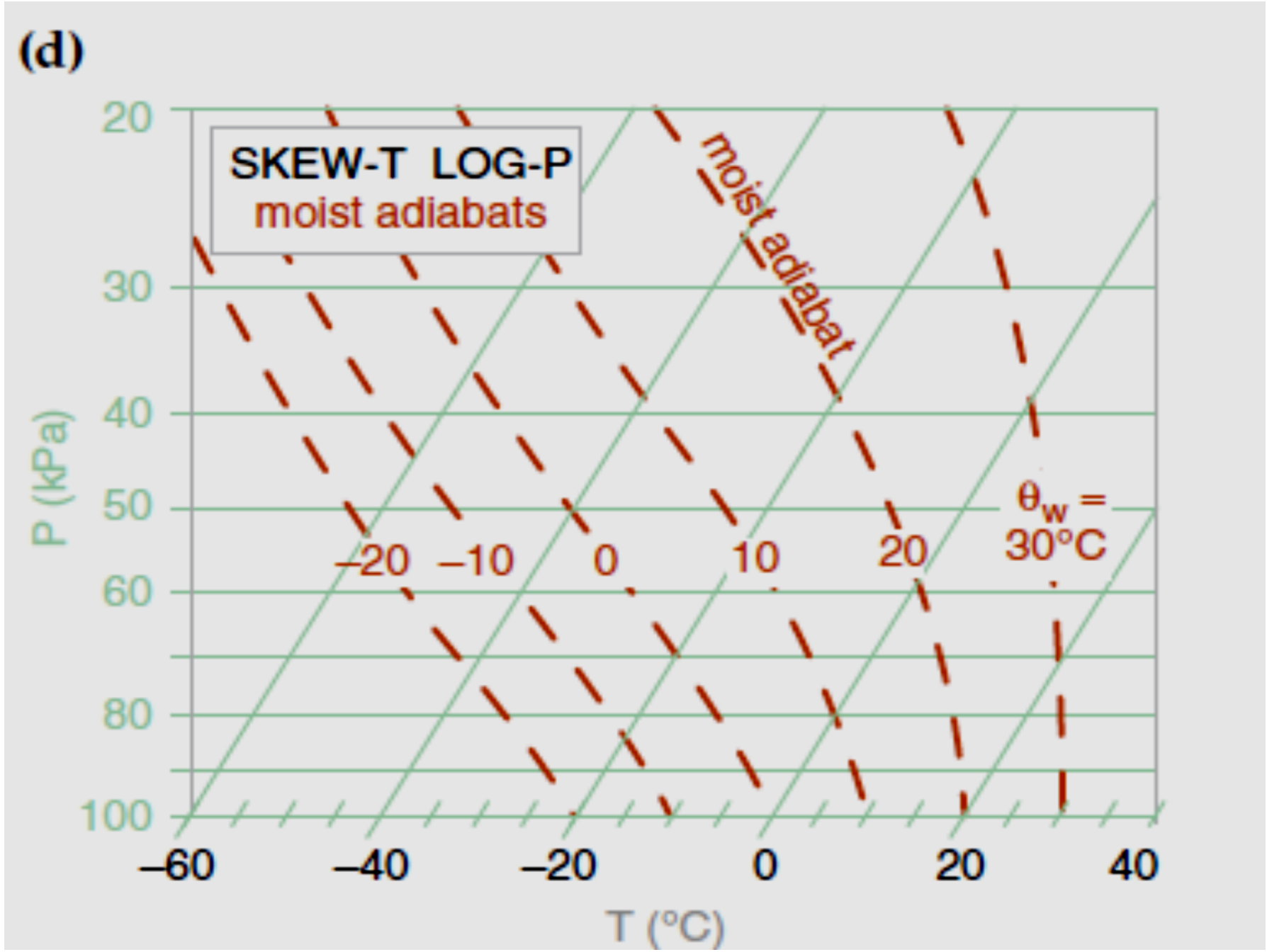


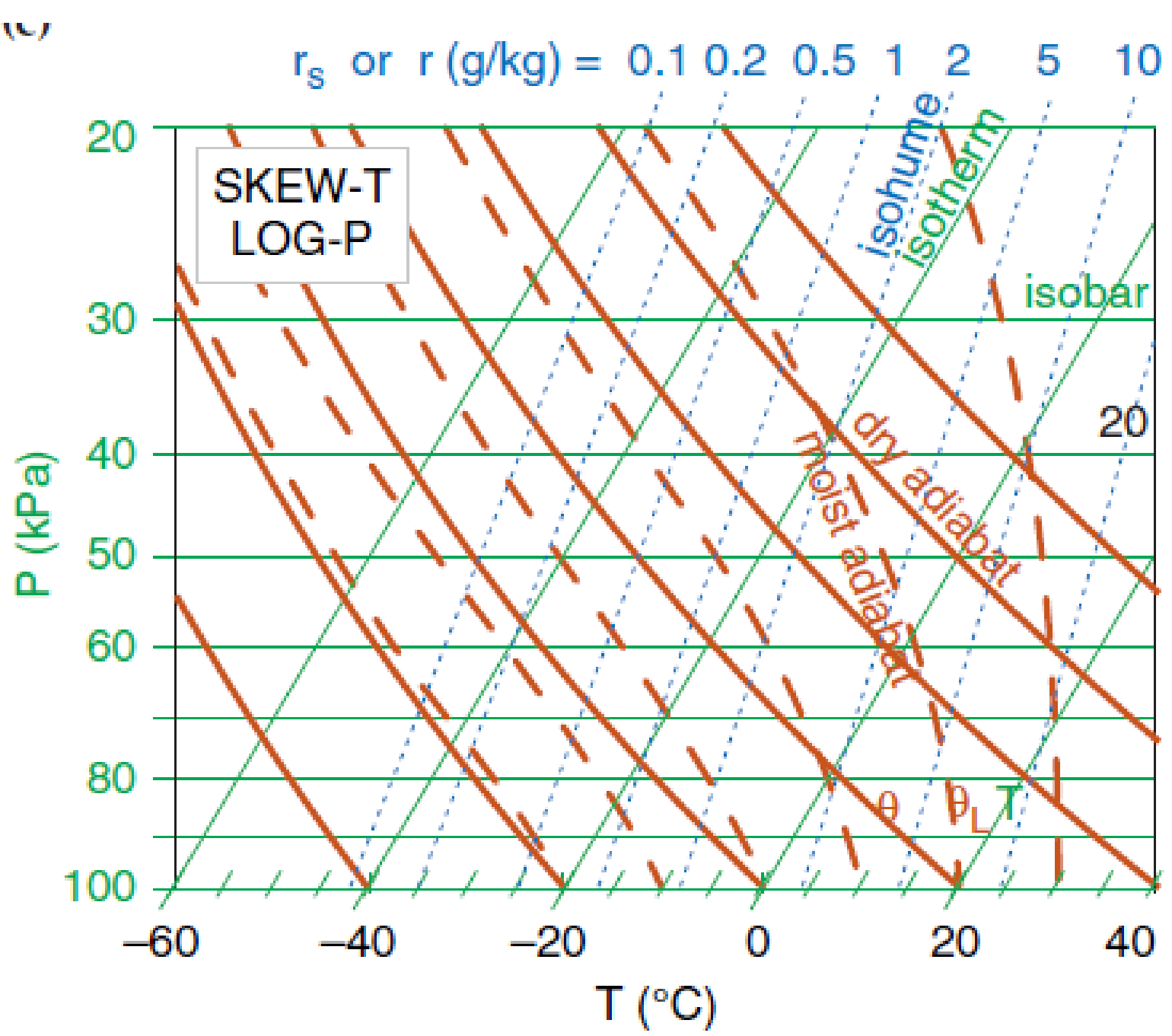
Building a skew-t log p diagram


(a)
SKEW-T LOG-P
isobars & isotherms
isotherm
isobar
P (kPa)
20
30
40
50
60
80
100
–60
–40
–20
0
20
40
T (°C)


b)
r_s or r (g/kg) = 0.1 0.2 0.5 1 2 5 10
SKEW-T LOG-P
isohumes
isohume
20 g/kg
20
30
40
50
60
80
100
P (kPa)
–60
–40
–20
0
20
40
T (°C)


(c)
SKEW-T LOG-P
dry adiabats
θ =
80°C
60
40
20
0
–20
–40
dry adiabat
P (kPa)
20
30
40
50
60
80
100
–60
–40
–20
0
20
40
T (°C)


(d)
SKEW-T LOG-P
moist adiabats
moist adiabat
θ_w = 30°C
–20
–10
0
10
20
20
30
40
50
60
80
100
P (kPa)
–60
–40
–20
0
20
40
T (°C)


r_s or r (g/kg) = 0.1 0.2 0.5 1 2 5 10
SKEW-T
LOG-P
isohume
isotherm
isobar
20
dry adiabat
moist adiabat
θ
θ_L
T
P (kPa)
20
30
40
50
60
80
100
–60
–40
–20
0
20
40
T (°C)

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.