

The Experiments of Weather Instruments & Observations lab.

(First Semester)

ASD / 2nd Stage

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Analysis and drawing of observation codes for the upper atmosphere

Devices used for upper atmosphere observations:

1. *Radiosonde*
2. *Pilot ballon*
3. *Radiowind*
4. *Satellites*

Upper observations codes:

It observations the upper atmospheres for synoptic analyzes and weather forecasts in terms of atmospheric pressure, temperature, relative humidity, and wind speed and direction.

MiMiMjMj



The type of station and replace it with one of the following formulas:

If the report is from a fixed earth station (TTAA)

If the report was taken from a marine station (UUAA)

If the report was taken from a small balloon or balloon (XXAA)

If the report is from a portable station (IIAA)

YYGGI_d



Date and time code

The date takes values between (01-31) or (51-81)

YY

Time and takes values between (00-23)

GG

Evidence of the last standard pressure level reached by the device

I_d

| <i>code</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | / |
|--------------------------------------|-----|-----|-----|-----|-----|---|-----|-----|-----|------|---|
| <i>Standard pressure level (hpa)</i> | 100 | 200 | 300 | 400 | 500 | - | 700 | 800 | 900 | 1000 | <i>There is no wind information in the report</i> |

IIiii



II Zone number / iii Station number

99 P_oP_oP_o T_oT_oT_{ao}D_oD_o d_od_od_of_of_o



The code at the station's surface where:

Atmospheric pressure

P_oP_oP_o

Temperature and tenths

T_oT_oT_{ao}

The difference between temperature and dew point

D_oD_o

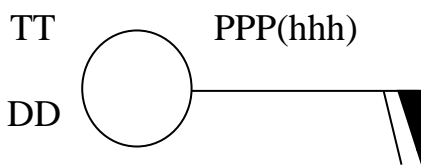
Wind direction

d_od_od_o

Wind speed

f_of_o

- The location of the weather elements on the station shall be as follows:



- The real value of the pressure level rise (hhh): is calculated in a different way for each level, as will be mentioned in detail later, and it is measured in units (gpm).
- The value of the dew point (T_dT_d): is found according to the following equation for all standard levels

$$T_d T_d = T T T_a - |DD|$$

The temperature is **positive** if its tenths (T_a) are **even numbers**,

The temperature is **negative** if its tenths (T_a) are **odd numbers**.

DD is absolute and unsigned:

a - If its value is within (00-50), it is written in tenths.

22547 means its real value is 4.7

b - If its value is within (56-99), then we subtract 50 from it.

For example, 29458 means its real value is 8 as well as 15773 means 23.

c- The value of DD is plotted on the station as it is and applied in the above equation to get the value of $T_d T_d$.

3. Wind direction and speed:

a- Write the tens digit for the direction of the wind at the end of the arrow for accuracy.

b- The wind speed remains the same when the date is added to 50, and the speed doubles when the date is normal, for example:

28022 for the date 23121: the speed is 22 m/s and draws 44 knots

20050 for the date 80121: the speed remains the same, i.e. 50 knots

C - If the wind speed is more than 100 kt. The hundreds digit is added to the ones in the direction, for example:

28655: 285 direction / 155 speed

29700: 295 direction / 200 speed