**The Experiments of Weather Instruments & Observations lab.**

**(First Semester)**

**ASD / 2nd Stage**

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***General formula of surface code***

**MiMiMjMJ**

***Drawing and analysis of surface observation codes and instruments used for measurement***

The surface observation code is written in the following form:

MiMiMjMj YYGGIw

IIiii IRIxhVV Nddff 1SnTTT 2SnTdTdTd 3PoPoPoPo 4PPPP 5aPPP 6RRRtR 7wwW1W2 8NhCLCMCH

* **Note:** There are latitude and longitude codes (LaLaLa) and (LoLoLo) but they are not mentioned in the main code above.

MiMiMjMj **←**

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

If the report is from **a stable ground station** (AAXX)

If the report was taken from **a marine station**  )BBXX(

If the report is from **a mobile earth station** (OOXX)

YYGGIw **←**

|  |  |
| --- | --- |
| **YY** | Date (01-31) |
| **GG** | Time (00-23) |
| **Iw** | The source and units of wind speed, takes the following values: |
| **0** | If the speed is **estimated (m/s)** |
| **1** | If the speed is **measured (m/s)** |
| **2** | If the speed is **estimated (knot)** |
| **3** | If the speed is **measured (knot)** |
| **/** | If the wind speed **is not available** |

IIiii  **←**

II Zone number / iii Station number

IRIxhVV **←**

Visibility group:

|  |  |
| --- | --- |
| **IR** | Gide of Sediment group |
| 0,1,2 | In the present of sediment  This means that there is a sixth group |
| 3,4 | In the absence of sediment, omitted or unattended sediment  This means that the sixth group does not exist |
| **IX** | Gide of weather case |
| 1 | Presence of weather case  This means that there is a seventh group |
| 2 | In the absence of weather case  This means that the seventh group does not exist |
| **h** | Base height of lower cloud |

|  |  |  |
| --- | --- | --- |
| Meters | feet | h |
| 0-50 | **0-100** | **0** |
| 50-100 | **100-300** | **1** |
| 100-200 | **300-600** | **2** |
| 200-300 | **600-900** | **3** |
| 300- 600 | **900-1900** | **4** |
| 600-1000 | **1900-3200** | **5** |
| 1000-1500 | **3200-4900** | **6** |
| 1500-2000 | **4900-6500** | **7** |
| 2000-2500 | **6500-8000** | **8** |
| 2500 or higher or no cloud | **8,000 or higher or no cloud** | **9** |
| Height of base of cloud is not known. | | **/** |

**Cloud Base Height Measuring Devices:**

1. Balloon

2. Scout

3. The siliometer

4. By the mathematical equation:

H=(T-Ta)/6.5\*1000

where:

H is the height of the cloud

T dry temperature

Ta The degree of dew point

6.5 is a constant number which is the rate of temperature decrease per 1000 metres.

|  |  |
| --- | --- |
| **VV** | Visibility (00-99) |
| 0 - 50 | We add two zeros to the right and the visibility is measured in units (m) |
| 51 - 55 | Doesn't used |
| 56 – 80 | We subtract 50, and the visibility is measured in units (km). |
| 81 – 89 | Visibility is calculated from the equation below and is measured in units (km(  VV=(ones digit)\*5+30 |
| 90 – 99 | This group gives visibility at sea |

The location of the visibility is as shown on the station

**vv**