Data Format of Levels 3 - 4 for Radiosonde data obtained during YMC-BSM 2020

October 23, 2021

<< Basic Information >>

Radiosonde type	:	Vaisala RS41-SG
Processor	:	MW41 Ver. 2.9.0
Original data archive	:	ASCII files are archived every 1 second.

<< Processing Level >>

Level-0	Original
Level-1	Same as original except for their format
Level-2	Only apparent error data have been removed.
Level-3	Additional corrections have been made.
Level-4	Same as Level-3 except for their format (5 hPa interval from 1000 hPa to 80 hPa in addition to the surface value, etc.).

<< Data Format >>

Level-3

Header	Line-01	Project ID
	Line-02	Launch site/ID
	Line-03	Location in deg-E, deg-N, height in meter
	Line-04	Actual Launch Time in UTC
	Line-05	Nominal Launch Time in UTC
	Line-06	Serial Number / Radiosonde Type
	Line-07	Ground station software
	Line-08-11	Remarks

Data

Following parameters are archived every 1 second as (f7.1, 2f8.2, 2x, 7f7.1, f8.0)

Time in second
Longitude in degree East
Latitude in degree North
Pressure in hPa
Temperature in degree C
Dewpoint temperature in degree C
Relative Humidity with respect to water in %
Zonal wind component in m/sec
Meridional wind component in m/sec
Mixing ratio in g/kg
Height in meters

Level-4

Data
Following parameters are stored every 5hPa from 1000hPa to 80hPa in addition to the surface as (2f8.2, 2x, 11f7.1, f8.0)

Longitude in degree East
Latitude in degree North
Pressure in hPa
Temperature in degree C
Dewpoint temperature in degree C
Relative Humidity with respect to water in %
Zonal wind component in m/sec
Meridional wind component in m/sec
Mixing ratio in g/kg
Specific Humidity ratio in g/kg
Potential temperature in K
Equivalent potential temperature in K
Saturated equivalent potential temperature in K
Height in meters

<< Remarks >>

Some of surface wind data were recorded as 0.0 deg & 0.0 m/s, when they were unmeasured. In the current data sets (level-3 and 4), those are expressed as “9999” indicating missing values.

Both Level-3 and 4 contain two directories expressed as *.0 and *.1, respectively. Their difference is that the latter adopted the method to correct near ground surface temperature and humidity values which might be affected by the surrounding structure based on Yoneyama et al. (2002), which was originally developed for ship-based observation. It is recommended to use “*.0” if researchers study actual local condition, while “*.1” may be adequate to see large-scale atmospheric condition. See the following reference for more details on the correction method.

- Reference -

Yoneyama, K., M. Hanyu, S. Sueyoshi, F. Yoshiura, and M. Katsumata, 2002: Radiosonde observation from the ship in the tropical region. *JAMSTECR*, **45**, 31-39. https://www.jamstec.go.jp/dcop/e/publications/pdf/Yoneyama-etal_2002_JAMSTECR.pdf

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