Data Format of Levels 3 - 4 for Radiosonde data obtained during MR21-03

March 14, 2024

<< Basic Information >>

Radiosonde type	:	Vaisala RS41-SGP
Processor	:	MW41 Ver. 2.11.0
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 >>

Since the initial several temperature and humidity data are likely affected by the ship's structure, those are corrected based on the correction scheme developed by Yoneyama et al. (2002).

- 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.godac.jamstec.go.jp/doc_catalog/external/metadata/shiken45_04/file/shiken45_04.pdf

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