Data Format of Levels 2-4 for Radiosonde data obtained during YMC-BSM 2018

November 3, 2024
August 13, 2021
March 13, 2021
August 26, 2020

<< Basic Information >>

Radiosonde type	:	Lockheed Martin LMS6
Processor	:	LMG
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 erroneous data have been removed.
Level-3	Additional corrections have been made. Methods of correction are provided in the header.
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-2/3

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 >>

Quality Control: For Level-2, erroneous data near surface (wrong input of pressure and wind as initial values) were expressed as “9999”. As for Level-3/4, humidity data have been adjusted to that obtained by Vaisala RS41. This procedure has been done based on the intercomparison with Vaisala RS41 and GNSS-derived precipitable water. Data, whose heating/cooling profiles near ground surface in daytime/nighttime have not been removed, are stored in ~~Level-3.0/4.0~~ Level-3.2/4.2, while ones with correction are stored in ~~Level-3.1/4.1~~ Level-3.3/4.3, respectively. If the user studies actual local impact, the former might be adequate to use.

As of March 13, 2021, we slightly revised correction procedure based on the work done by Yoneyama et al. (2021).
A look-up table for RH bias correction is the same as the previous one. But such a correction was applied only to the data taken during daytime in the clear sky condition, whereas correction was applied to all daytime data for previous version (3.0/3.1/4.0/4.1). Previous data have been removed from this site.
~~Previous data and relevant documents are stored in “Old Versions” folder, which is kept only for a reference to the users who used previous datasets. We do recommend not to use those data from now as of March 13, 2021. Sorry for this inconvenience.~~

Yoneyama, K., M. Fujita, A. Seiki, R. Shirooka, S. Yokoi, E. O. Cayanan, C. O. Iglesia, and O. C. Cabrera, 2021: Evaluation of LMS6 and RS41 radiosonde humidity data obtained during YMC-Boreal Summer Monsoon study in 2018 and 2020. *J. Meteor. Soc. Japan*, **99**, 1115-1125. https://doi.org/10.2151/jmsj.2021-054

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