

Yoneyama, K., M. Fujita, A. Seiki, R. Shiroyaka, S. Yokoi, E. O. Cayan, 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.

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Plain Language Summary: Quality control of radiosonde humidity data was performed for the data obtained in the international field campaign called the Years of the Maritime Continent (YMC) - Boreal Summer Monsoon study in 2018. This was done based on the intercomparison between two radiosonde types. We also used precipitable water vapor data derived from Global Navigation Satellite System signals for assessment. In addition, we proposed a method to determine whether our correction procedures can be applied to other data or not.

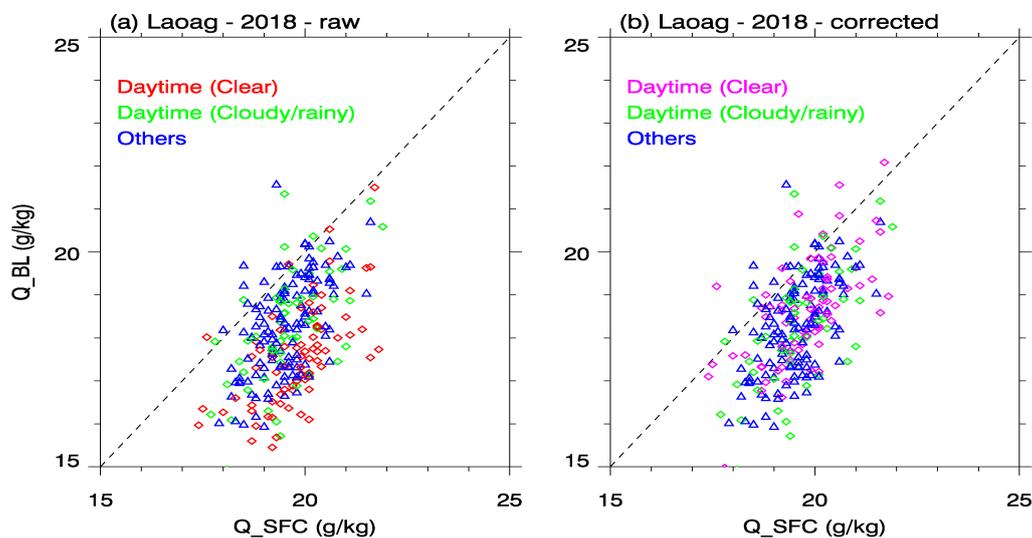


Figure 1. Specific humidity at the ground surface measured by the surface meteorological station (Q_SFC) and averaged over 300-m from the radiosonde initial point (Q_BL) for (a) before and (b) after correction for the LMS6 data obtained at Laoag during July - August 2018. Red/magenta, green, and blue indicate data taken at clear daytime, cloudy/rainy daytime, and others (evening and nighttime). Correction was applied only to clear daytime sounding data (red/magenta).

Highlights:

- Intercomparison between the Lockheed Martin LMS6 and Vaisala RS41-SGP radiosonde data obtained in Laoag, Philippines in July - August 2018 as well as precipitable water vapor comparison with that derived from GNSS-signal demonstrated that LMS6 data were drier than that of RS41 only during daytime clear sky condition.
- We developed a look-up table, which adjusts LMS6 relative humidity values to that of RS41.
- Comparison of specific humidity at the surface and averaged over 300m in the boundary layer can be used to judge whether the same look-up table can be applied to other LMS6 data or not.