

Kuo, H., T. Yo, H. Yu, S. Su, C. Liu, and P. Lin, 2025: Data quality control and calibration for mini-radiosonde system “Storm Tracker” in Taiwan. *J. Meteor. Soc. Japan*, **103**, <http://doi.org/10.2151/jmsj.2025-029>.

**Plain Language Summary:** This study reports the correction methods for a newly introduced upper-air radiosonde instrument, “Storm Tracker” (ST), which has undergone more than 1,000 co-launches with Vaisala RS41-SGP (VS) data in field observations in the Taiwan area from 2016 to 2022. The corrected ST soundings demonstrated overall sound quality and performed exceptionally well below 700 hPa. The lower atmosphere in a region with complex terrain can exhibit significant variations in wind, temperature, and moisture. With its relatively low cost, high success rate, and accuracy in wind, temperature, and moisture measurements, ST can complement regular upper-air radiosonde observations to provide high-resolution data in the lower troposphere. High-resolution observations of the lower troposphere are essential for severe weather research in East Asia. The figure below shows an example of using ST for high-resolution observations.

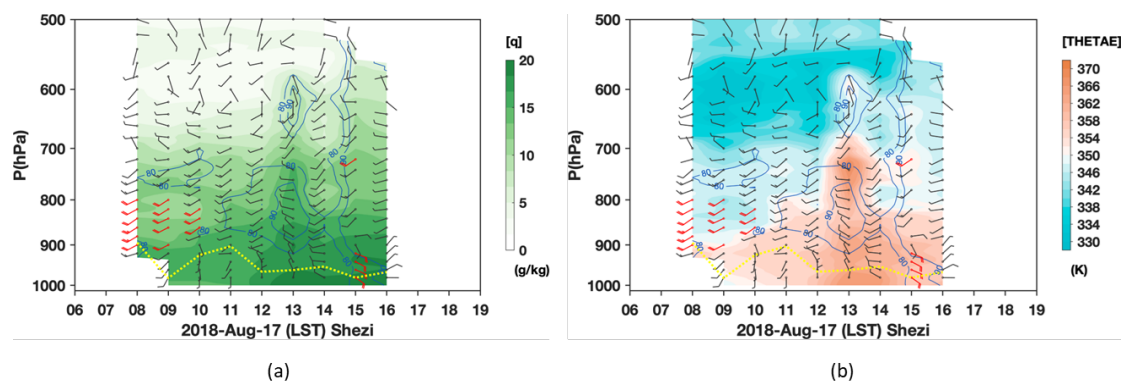


Fig. 17. The continuous ST observations of one-hour intervals on 2018-08-17 at Shezi. The soundings were corrected with CDF, and the derived specific humidity,  $q$ , is shown in panel (a) with the wind field. The derived equivalent potential temperature,  $\Theta_e$ , is shown in panel (b).