

Updates for Meisei GDPs (RS-11G & iMS-100)

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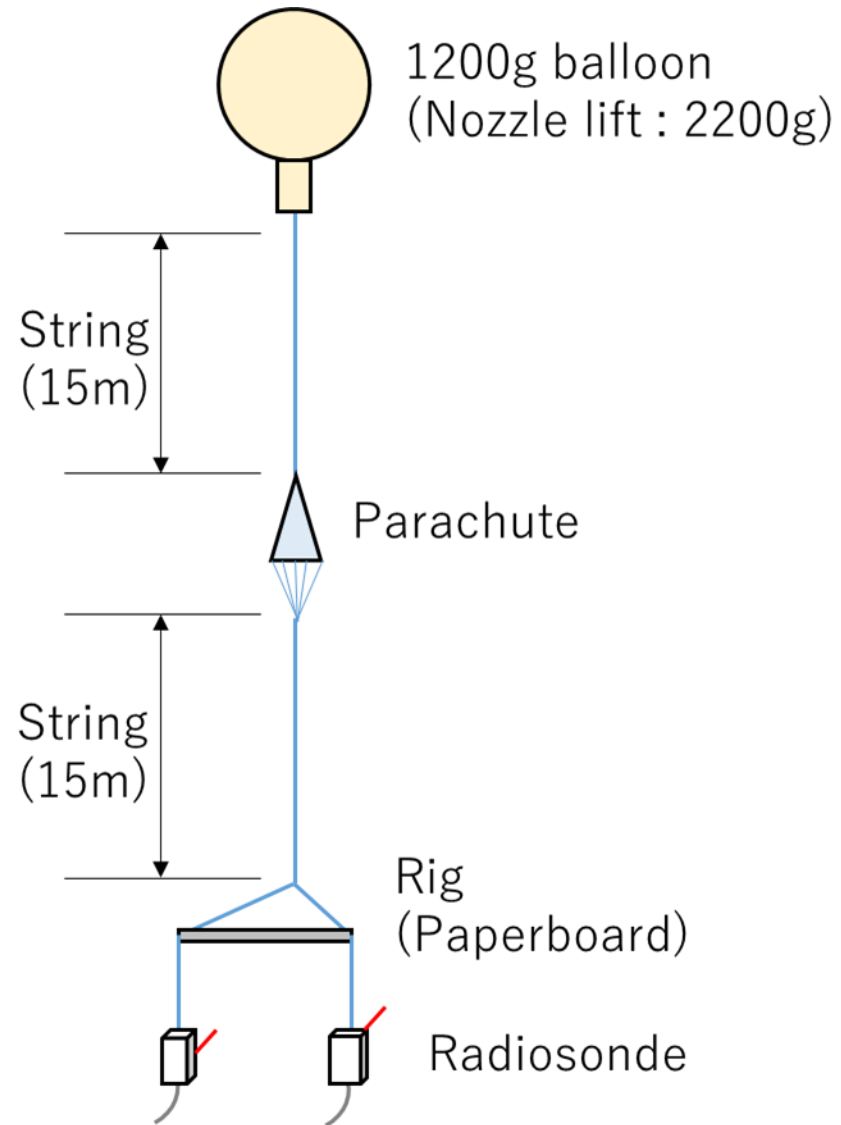
- The article for evaluation of GDP for iMS-100 (intercomparison with RS92) was accepted in AMT (amt-15-5917-2022)
 - Evaluation of new version of GDP for RS-11G is one of future tasks
- The new version of technical document for Meisei GDPs (GRUAN-TD5-Rev2) are now under revision
 - Some minor revision is necessary
- Intercomparison between iMS-100 and RS41 at Tateno are under carrying out about 2 year
- Data processing for iMS-100 observation Ver.2 (GDP.2) has started in October



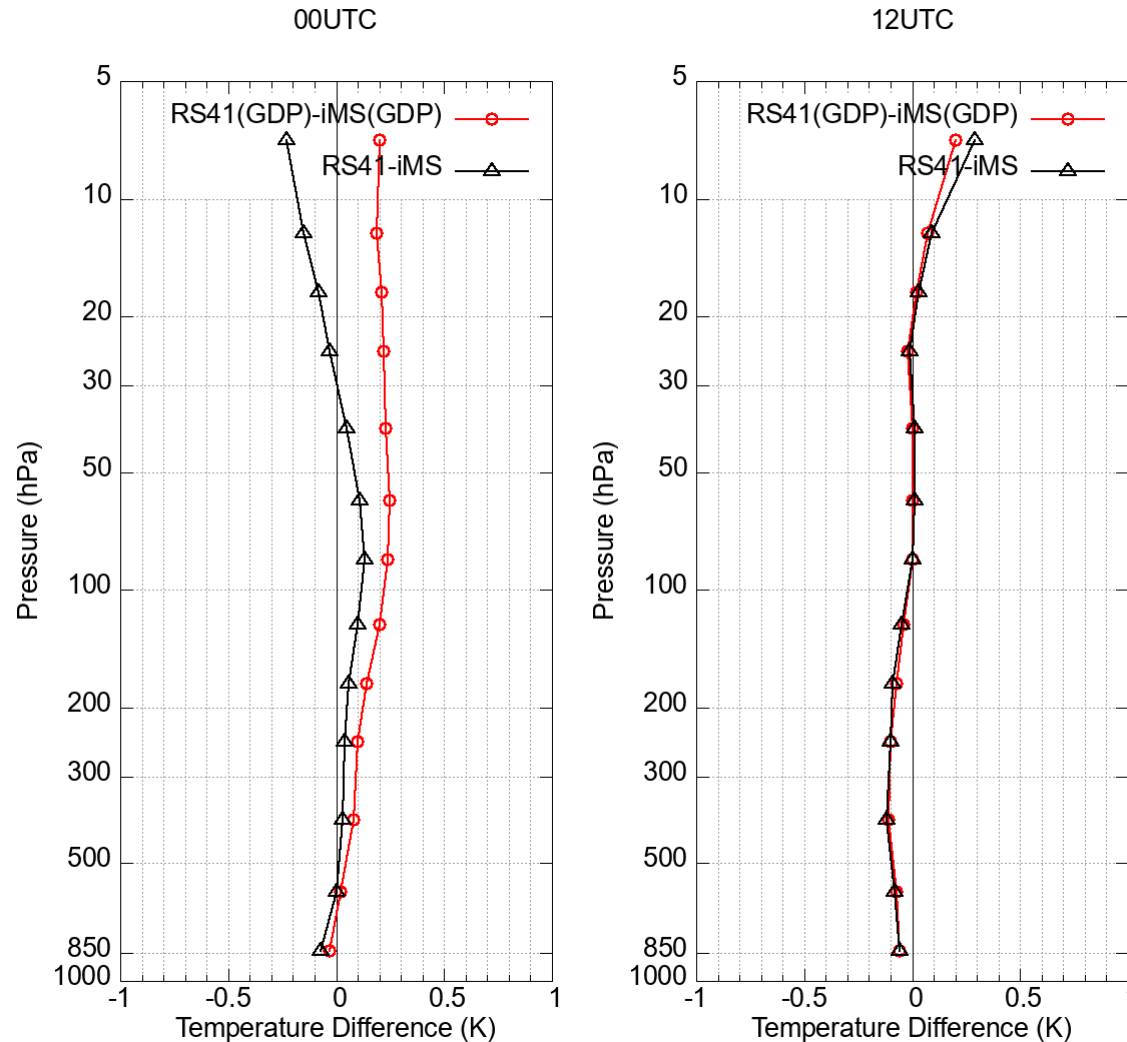
Intercomparison between iMS-100-GDP and RS41-SG-GDP

- Tateno is a center of Meisei radiosonde (iMS-100, RS-11G) GDP processing
- The processing algorithm of iMS-100 GDP was switched to ver.2 (GDP.2) in October 2022
- For iMS-100 GDP.2, refer to “Comparison of GRUAN Data Products for Meisei iMS-100 and Vaisala RS92 Radiosondes at Tateno, Japan” (<https://doi.org/10.5194/amt-15-5917-2022>)
- Tateno operates dual-flight of iMS-100 and RS41-SG once a week to characterize these measurements since July 2020

Flight configuration

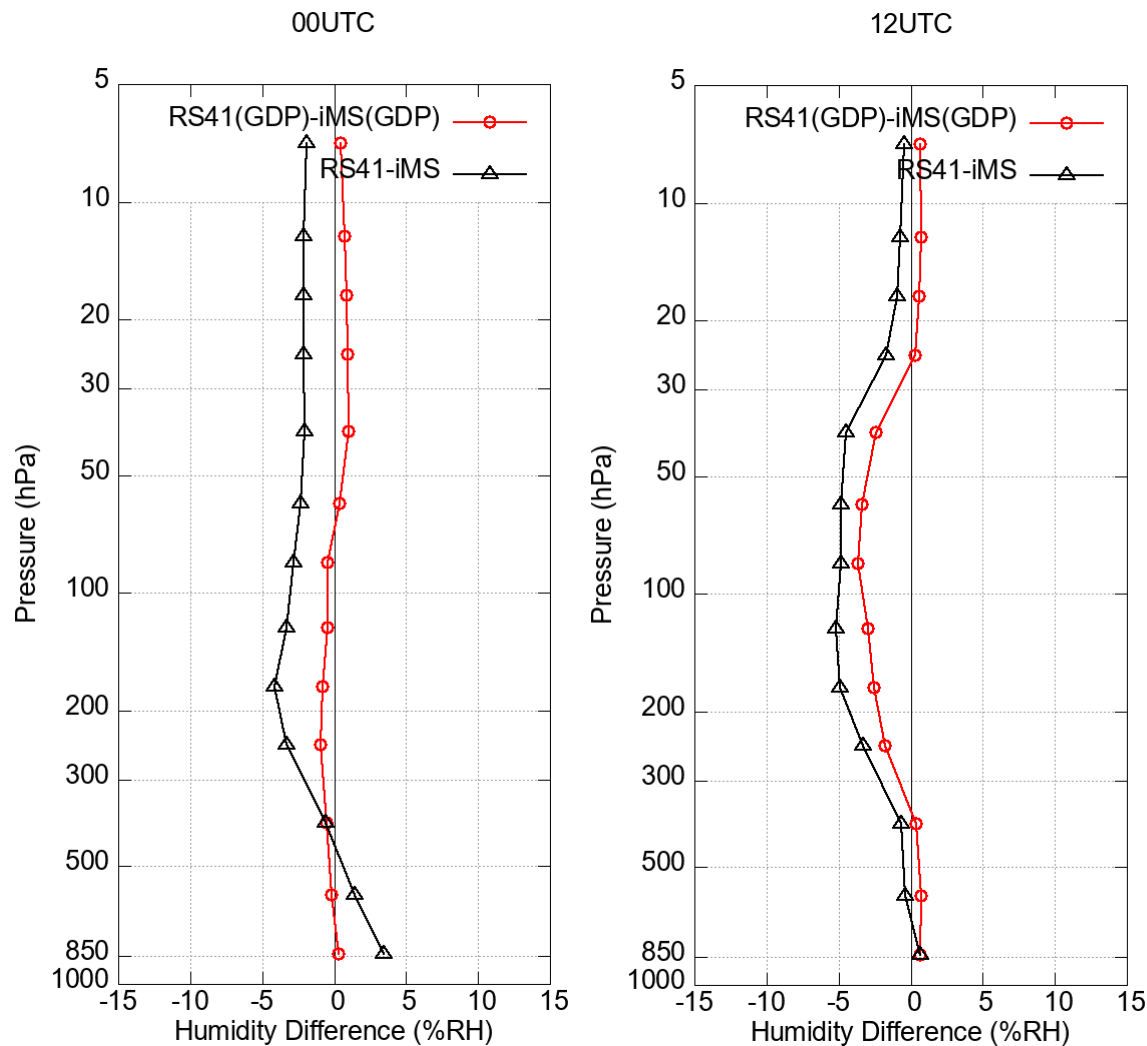


Intercomparison between iMS-100 and RS41-SG (Temperature)



- ✓ The mean for 26 sets of daytime flight (00UTC) and 30sets of nighttime flight (12UTC)
- ✓ iMS(GDP) is lower than RS41(GDP) in daytime measurements

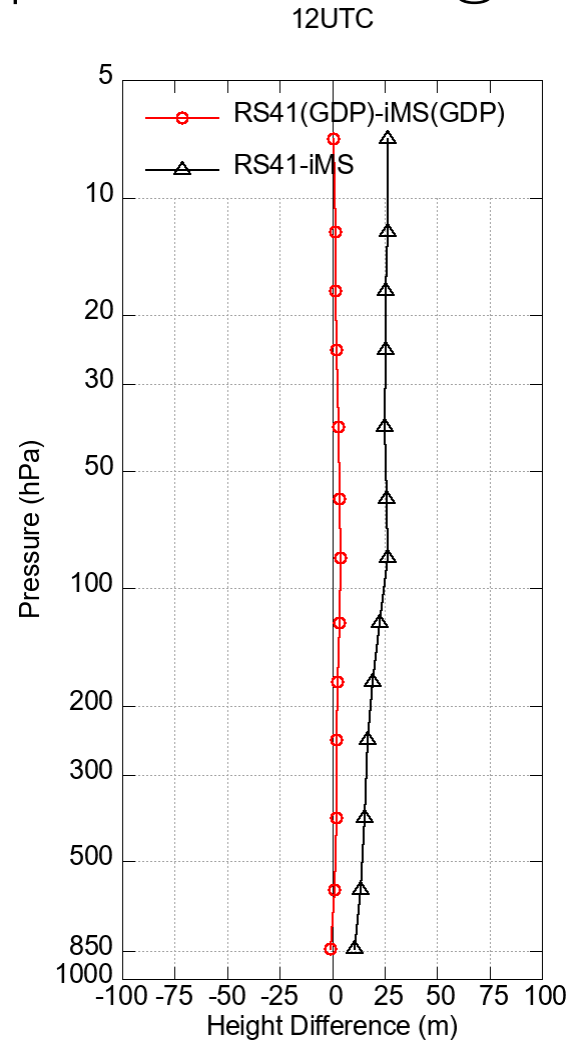
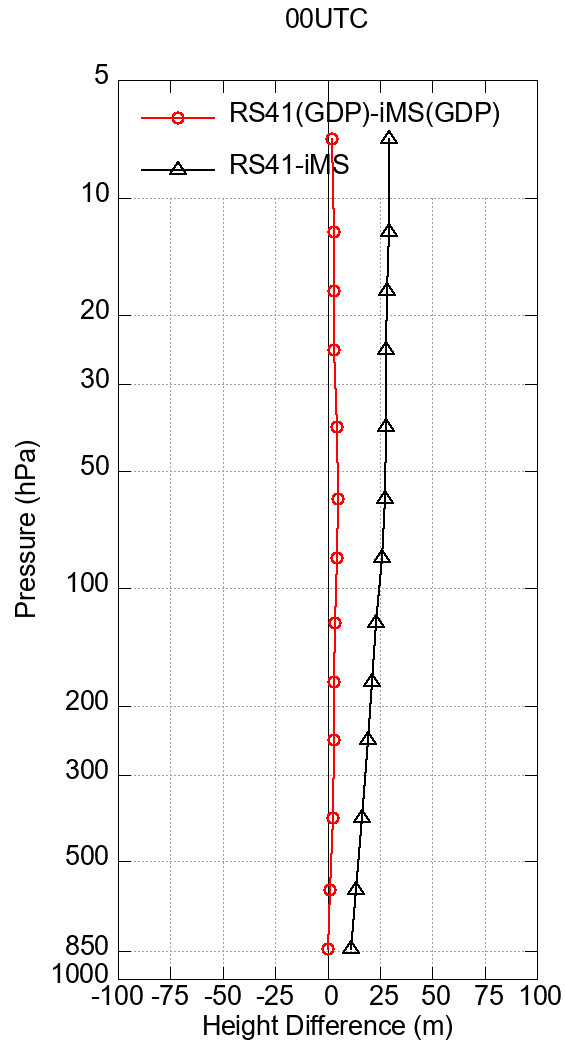
Intercomparison between iMS-100 and RS41-SG (RH)



- ✓ The mean for 26 sets of daytime flight (00UTC) and 30sets of nighttime flight (12UTC)
- ✓ iMS (GDP.2) is improved in time-lag collection, hysteresis effect collection and TUD* collection
- ✓ The daytime difference between GDPs (RS41(GDP)-iMS(GDP)) is smaller than the difference between maker products (RS41-iMS) in the upper troposphere and lower stratosphere

*TUD : Temperature-humidity-Dependence

Intercomparison between iMS-100-GDP and RS41-SG-GDP (Geopotential height)



- ✓ iMS-100 (GDP.2) recalculates the geometric altitude with the geoid height interpolated from the finer model (EGM2008, 5 min X 5min grid model)
- ✓ The difference between GDPs are generally smaller than the differences between maker products

Thank you for your attention