



National Physical Laboratory

GRUAN ICM-11 Measurement Scheduling and Combination Task Team Summary

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Summary of TT aims

- Aim to develop methodologies to optimally combine measurements of ECVs from multiple instruments to meet all GRUAN objectives including climate trend detection, satellite calibration/validation, and studies of local mesoscale processes and events.
- Task team membership:
 - Tom Gardiner & Fabio Madonna (co-chairs), Dave Whiteman, Rigel Kivi, Lori Berg, Xavier Calbet Alvarez, Jordis Tradowsky, John Dykema, Alessandro Fasso, Tony Reale, Alexander Haefele, Richard Querel, Doug Sisterson and Rob Kursinski.
- To date team activity remains voluntary and informal, so outputs mainly relate to relevant work within other projects.
- Goals includes:
 - providing the best available estimate of the vertically resolved atmospheric column above the site;
 - ensuring continuous measurements of an atmospheric parameter without temporal gaps;
 - understanding and better quantifying the total uncertainty budget;
 - optimising the operational costs.

Summary of TT activities

- Recent activities by members of the task team have included:
 - The RIVAL campaign, with weekly dual radiosonde soundings (RS92 & RS41 on same balloon linked to JNSS overpasses) performed at ENA, NSA and SGP. (*Tony's talk on Wednesday*)
 - Copernicus Climate Change Service development for reference and baseline network data covering a range of GRUAN-relevant ECVs. (*My talk later tomorrow, Fabio's talk on Friday*)
 - Study of sensitivity of trend estimation to different linear fitting methods and to subsampling in radiosonde historical time series (*Fabio*)
 - Scientific publication on temperature SASBE for Lauder: Combining data from the distributed GRUAN site Lauder–Invercargill, New Zealand, to provide a site atmospheric state best estimate of temperature; *Jordis S. Tradowsky et al, ESSD, 2018.*
 - Development of co-location uncertainty assessment tools, following from GAIA-CLIM project, utilising ECMWF ERA-5 reanalysis data. (*Tom - draft paper due in June*).
 - Ongoing programme of multi-payload sonde (RS92/RS41/CFH and aircore) launches from Sodankyla and campaign launches from Antarctic in late 2018 / early 2019. (*Rigel's talk on Wednesday*)