ACTIVITY REPORT:

Fine-Scale Atmospheric Processes and Structures (FISAPS)

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28th SPARC SSG meeting

Part II: Activity reporting

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Activity overview

- Stimulate research on fine-scale atmospheric processes and structures that are important for global modelling and other societal benefits. Increase access to global high vertical-resolution radiosonde data (HVRRD).

Progress and achievements

- Achievements in 2020
  - Increased availability of global HVRRD is becoming a reality

Figure from January 2021 SPARC Newsletter

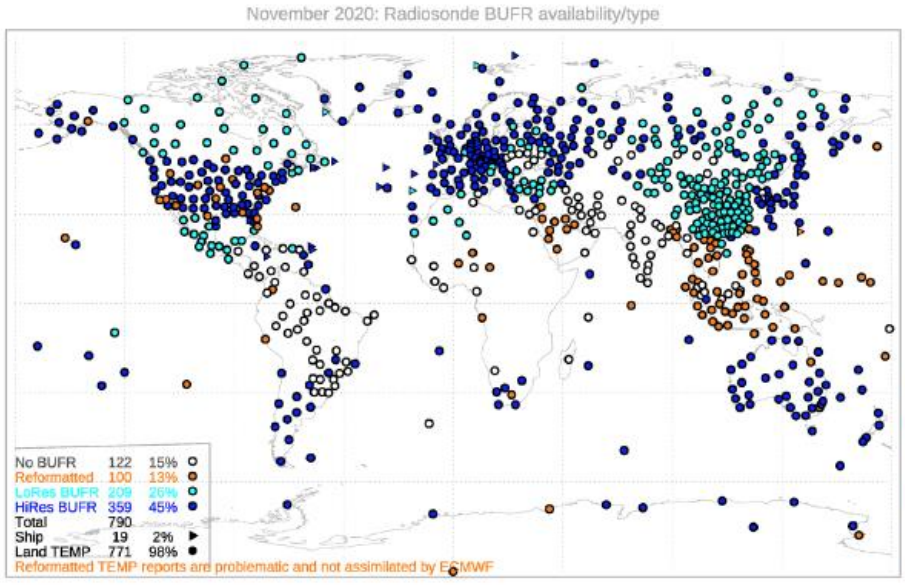

Figure 5: Map of radiosonde stations reporting in November 2020 as processed at ECMWF, dark blue symbols show stations providing HVRRD; cyan symbols show those reporting low- resolution BUFR.

Progress and achievements (continued)

– Scientific results & publications

- Geller, M. A., P.T. Love, B. Ingleby, and X. Yin, New Availability of High Vertical-Resolution Radiosonde Data for Research, *SPARC Newsletter No. 56, January 2021*.
- Scherllin-Pirscher, A. K. Steiner, R. A. Anthes, M. J. Alexander, S. P. Alexander, R. Biondi, T. Birner, J. Kim, W. J. Randel, S.-W. Son, T. Tsuda, and Z. Zeng, Tropical temperature variability in the UTLS: New insights from GRS radio occultation observations. *J. Climate,* doi.org/10.1175/JCI-D-20-0385.1.
- Geller, M. A., P. T. Love, L. Wang, A Climatology of Atmospheric Unstable Layers: Some Early Results. *Mon. Wea. Rev. In final revision.*

Progress and achievements (continued)

- Planned 2022 workshop on science results from newly available global high vertical-resolution radiosonde data (HVRRD. Partial funding from US NSF anticipated).
- Capacity Building – Above workshop will encourage scientists from various countries to do science studies with the newly available HVRRD data.

Collaborations

- No collaborations to report at this time, but our science is useful for the gravity wave activity, as their science is complementary to ours.
- We will be exploring collaborations with the aircraft turbulence and atmospheric radar communities.

Future plans

- The previously mentioned workshop on analysis of newly available global HVRRD plus a resulting paper collection in a scientific journal.
- We also wish to have a more general FISAPS workshop, but no specific plans for this exist as of this time.
- The same is true of a future workshop on atmospheric turbulence.

Emerging issues

- Leadership seems stable for the moment.
- Some support is requested for 2022 workshop.
- Should we try to establish some formal relation with the aircraft turbulence community?