**The Ohio State University - Bromwich and Wang**

**From last meeting (2017/11)**

**The work items are discussed to get the pathway ahead illuminated. Several questions are posted.**

**1) Work Item 1: Outputs from COLA models, Arctic regional models and reanalyses will be converted and made comparable through automatic composition of Web processing**

**services to support on-demand re-projection, re-formatting, and/or re-scaling (temporally and spatially).**

**Q: Is there any link for us to download example outputs from COLA models and Arctic models and reanalysis? It will be perfect if information about the models and products is associated as well.**

ASRv2 15-km data (2000-2012) can be downloaded from UCAR CISL RDA server <https://rda.ucar.edu/datasets/ds631.1/>. There is some brief information about model and data on the web page. OSU can provide more details if necessary. Our current task is extending ASRv2 through the end of 2016 with an expected completion at early 2018.

A new version ASRv2.1 is under way. ASRv2.1 uses the latest version 3.9.1 of WRF and WRFDA, changes the microphysics scheme to Morrison with specified variable aerosol concentrations, and outputs the surface variables at hourly intervals. Horizontal and vertical resolution will remain the same as ASRv2. We expect to complete 2000-2017 by mid-2018, and then to keep ASRv2.1 up to date with a delay of roughly 3 months. This will be continued at least through the end of the MOSAiC drift campaign in the Arctic, i.e., end of 2020.

**2) Work Item 2: Association analyses, e.g. the connection of Arctic changes to mid-latitude and tropical (e.g. El Niño) climate dynamics in order to understand the role of warm air mass circulations over the Arctic, will be facilitated.**

**Q: Is there any ongoing hypotheses or proven discoveries about teleconnection out there so that we can directly land on some specific cases to quickly begin?**

A special issue published by Advances in Atmospheric Sciences (2018), 35:1, <https://link.springer.com/journal/376/35/1/page/1> is a good place to start.

ASR can provide some detailed analyses for some of those findings in recent years (2000-)

**3) Work Item 3: Direct comparison of high-resolution global model outputs with EO.**

**Q: Do we have any ideas on which EO will be used?**

We are not sure EO (Earth Observation) is referring to satellite-based remote sensing, or is referring to any form of observations.

For satellite-based remote sensing, Clouds and the Earth's Radiant Energy System (CERES) is a good place to start. CERES instruments are collecting observations on three separate satellite missions, including the EOS Terra and Aqua observatories, the Suomi National Polar-orbiting Partnership (S-NPP) observatory, and soon, the Joint Polar Satellite System. The main purpose of CERES is to provide valuable Earth radiation budget data to the science community.

For any near-real time observations, NCEP PREPBUFR data (<https://rda.ucar.edu/datasets/ds337.0/>) is a good choice. NCEP PREBUFR data are composed of a global set of surface and upper air reports operationally collected by the NCEP. These include various land surface, marine surface, radiosonde, etc. This dataset has been used for various NCEP numerical weather prediction applications and reanalyses. However, data is in PREBUFR format which is not user friendly and hard to decode.

For other time-lagged observations, we can find them at NCDC, NCAR RDA, NSIDC, etc.

**4) CyberWay will facilitate re-projection, re-formatting, and/or re-scaling (spatially and temporally) to make EO and model outputs comparable.**

**Q: What format will be the comparison in, image, chart or even tables? We have multiple development options in each category.**

In Atmospheric Science/Meteorology, we usually compare them in various spatial plots, satellite images, and tables for station data.

**That's basically all our confusion right now. Look forward to your advice! Thanks!**