

WCRP Data Advisory Council Report

The WDAC acts as a focal point for all observational and data matters across the programme. It promotes open data policies, protocols and standards across the programme, identifies observational requirements and advocates for sustainable observing systems for climate research, and supports the generation of climate data sets and the development of reanalyses in particular.

1. Highlights for JSC

During WDAC7 (March 2018), considerable time was spent to discuss the Strategic Plan and a comprehensive set of inputs was provided to the JSC via the WCRP secretariat. In this context, a joint session was held with the CEOS-CGMS WG Climate to strengthen collaborations with space agencies.

A joint session of all WCRP-GCOS panels with WDAC is currently planned for late March 2019 to improve the mutual WCRP-GCOS coordination mechanisms. The new Implementation Plan will be an opportunity to review and streamline those linkages as well.

The WCRP/GCOS International Data Prize 2017 was awarded to Dr Markus Donat from the University of New South Wales, Australia (<https://www.wcrp-climate.org/wdac-activities/idp2017>).

Major efforts are led by Task Teams (TTs): obs4MIPs, TIRA and SurFlux. The TTs address making observations available for model Intercomparison, reanalyses inter-comparison and pan-WCRP surface fluxes, respectively [Observations for Model Intercomparisons (obs4MIPs), Task Team for the Intercomparison of ReAnalyses (TIRA) and Surface Flux (SurFlux)].

Some highlights of those groups are outlined below.

2. obs4MIPS

- Align obs4MIPs with CMIP6 including dataset specification, with significant investment from the US (NASA, DoE)
- Addition of supplemental information capability that can be attached to datasets (e.g. uncertainty estimates, quality flags, transfer function information, etc.)

- Addition of “readiness indicators” to facilitate easier user understanding of specific dataset characteristics
- Call for new datasets has netted ~100 additional datasets to be added this year to the collection

Challenges: Preparation and enhancement of obs4MIPS to cope with CMIP6 come at the expense of facilitating the inclusion of new datasets. Streamlining the preparation and ESGF-publishing of data continues to be a challenge but significant progress has been made.

See the obs4MIPs data portal for more information:

<https://www.earthsystemcog.org/projects/obs4mips/>

3. TIRA

- Focus on developing an intercomparison project for reanalyses, inclusive of all disciplines (e.g. atmosphere, ocean, land, chemistry, cryosphere)
- Establishing a WWW presence independent of contributing agencies:
<http://reanalyses.org/wcrp-task-team-intercomparison-reanalyses-tira>
- Ad-hoc Team meeting(s) coinciding with the 5th WCRP International Conference on Reanalyses (ICR5)
- Developing pilot projects on reanalysis intercomparison in order to initiate a discussion on the broad variety of issues and to facilitate the development of the project
- The team is made up of developing centers and representatives of the major WCRP panels. Three co-chairs are presently leading the team. The team now includes the expertise from ESRL - Web-based Reanalysis Intercomparison Tool - WRIT, and NASA - Collaborative REAnalysis Technical Environment - CREATE)

Most team members were heavily involved in the scientific organisation of the very successful 5th WCRP International Conference on Reanalyses (Rome, 13-17 November 2017), co-sponsored by the ECMWF Copernicus Climate Change Service (C3S). A BAMS paper describing the outcomes of the conference has been accepted and will be published soon.

Challenges: Working better with and serve better the Core projects and Grand Challenges to ensure optimal use of this resource. Definition of a long-term reanalysis intercomparison project. Communicate better strengths and weaknesses of the many and interdisciplinary reanalyses.

More information about TIRA can be found in the white paper:

https://reanalyses.org/sites/default/files/groups/users/michael.bosilovich/TIRA_WDAC_v1b.pdf

4. SurFlux

A number of programs and projects under the WCRP umbrella have surface fluxes as a component, as do initiatives partnering with or outside of WCRP. The WDAC's SurFlux Task Team (TT) acts in consideration of such initiatives and serves as a link between various relevant WCRP activities, including partners such as SOLAS.

One notable upcoming product of the TT will be a white paper outlining the need for a coordinated high-level approach to improving our understanding of surface-atmosphere fluxes, including the TT's near-term objectives. The upcoming white paper addresses important science questions like:

- What are some of the remaining questions related to data focusing on surface fluxes?
- Measurement and modelling techniques; and
- Surface flux parameterizations

Challenges: The white paper also includes information on related activities by other relevant groups (including the core projects) and links to the larger community. The challenge is the need for more effective collaboration with other relevant groups with a focus on or link to surface fluxes within WCRP, but also external to WCRP. Another strong concern comes from that there are critical observing systems that contribute considerably to the science and research of surface fluxes, but for which operational continuity is threatened.
