

## WGNE Conference call

1 February 2019, 1600 Europe time

### Meeting Minutes

**Present:** Carolyn Reynolds (co-chair), Keith Williams (co-chair), Oscar Alves, Julio Bacmeister, Francois Bouyssel, Caio Coelho, Mike Ek, Ariane Frassoni, Daniel Klocke, Ron MacTaggart Cowan, Nils Wedi, Fanglin Yang, Guenther Zangl, Xubin Zeng

**WCRP JPS:** Michel Rixen

#### Welcome

Keith Williams welcomed all participants, in particular the new WGNE members Ron and Fanglin, and thanked the incoming co-chair Carolyn for stepping in.

#### WMO Constituent Body Reform, WCRP Update and implications for WGNE

Michel provided an update on the WMO Constituent Body Reform (CBR), noting that the current eight WMO Technical Commissions will be restructured into fewer bodies (see <https://public.wmo.int/en/governance-reform> for details).

Relevant to WGNE, the WMO Commission for Atmospheric Science (CAS) will be expanded into a new “Research Board on Weather, Climate, Water and the Environment” which will move away from a strict intergovernmental arrangement to strengthen the integration between current research programmes (WCRP, WWRP and GAW) across non-governmental actors, in particular academia, research centers and the private sector.

He further noted that WCRP has finalized its Strategic Plan (see <https://www.wcrp-climate.org/resources/wcrp-sp> for details), which is currently pending approval from Sponsors (WMO, IOC, ISC) and to be complemented by a Transition/Implementation Plan. The new strategy builds on the recommendations from the WCRP Sponsors Review which recommended a stronger integration of model development across research programmes, hence an opportunity for WGNE to address numerical experimentation at an Earth System model level, beyond its current mandate more specifically focused on the atmosphere. Attendees commented positively on this opportunity but noting the need to review membership to that effect.

### 3) Review of WGNE33 actions

#### Actions from WGNE-33

**Action 1 - co-chairs** to update survey (only rank relevant issues, one survey for each timescale. possibly add whether coupled, consider asking how centre investigates systematic errors) and circulate to WGNE/WGCM/WGSIP mailing lists.  
**Ongoing:** Carolyn will send modified version to the group. Soon to be posted on WGNE web site and sent to modelling working groups and participants.

**Action 2 – All members** to consider sending more ‘news’ items to Elena for website (including model system upgrades).  
**Ongoing:** Several groups have or are planning to send updates to Elena. NCAR mentions the atmospheric model working group meeting, 19-21 Feb, Boulder. Julio will forward information for meeting summary if/when available.

**Action 3 – Elena Astakhova** to email members requesting short presentations on model systems.  
**Done. Closed.**

**Action 4 - Co-chairs** to refer bias for tropical cyclones to be too weak in analysis to DAOS.  
**Ongoing.**

**Action 5 – Junichi Ishida** to liaise with CMA to address missing data issues and possibly remove from published plot until this has been done.  
**Done. JMA has modified website and Junichi liaised with Qiying. Closed.**

**Action 6 - Francois Bouyssel and Carolyn Reynolds** to complete protocol for surface flux project (collect metadata e.g. on convective precipitation, detail of surface soil moisture request) and circulate around WGNE members  
**Ongoing:** François has set up a test data archive at Meteo France. Updated protocol to be circulated with WGNE shortly. Ready for distribution soon.

**Action 7 - Ariane Frassoni, Francois Engelbrecht and Qiying Chen** determine where aerosol project data should be stored. Finish protocol (especially considering data volumes of regional experiment) and circulate around WGNE members.  
**Ongoing:** WGNE and S2S are evolving the protocol. Based on recent estimates, needed storage is an issue (regional experiments will generate a large amount of data). CPTEC will provide 10TB to store the data. At a 28 January meeting it was decided to formulate a shorter list of priority variables to reduce storage, and invite participating centers to store the full list of variables themselves. More details via email next week.

**Potential splinter meeting planned at EGU for discussions with potential contributors.**

**Action 8 - Julio Bacmeister** to look if required precipitation fields are available from TIGGE or S2S in order to extend the NWP ‘climate style’ precipitation evaluation.

Done: From Julio: Investigations of bias growth vs forecast lead time should be possible. Convective and large-scale precipitation are not separately reported. Unsure whether horizontal resolution is sufficient for studies of orographic precipitation.

**Action 9 - Gunther Zangl** when the computer table is next updated to request fewer lead times for the table, request only fill in information where known, aerosols page more free-form, consider clarification on performance requests, resource usage by suite components.

Done: Revised table sent in mid-November - updates requested from members.  
**Closed.**

**Action 10 - co-chairs** to circulate GASS white papers. **All members** to pass on to relevant people in their centres and those people to make contact with the project leads. Especially consider participating in COORDE.

Done: These can be found at <http://www.gewex.org/panels/global-atmospheric-system-studies-panel/gass-projects/>. NCEP and MF will participate in the COORDE project. ECMWF involved with GASS. Overall good participation rate from operational centers. **Closed**

**Action 11 - co-chairs** to liaise with Michel Rixen to extend MJO-TF for at least 3 years, maybe 4 years.

Done: Extend for 4 years. **Closed.**

**Action 12 – All members in climate centres** to consider submitting transpose-AMIP experiments to NAWDEX.

Done. **Closed.**

**Action 13 - Hannah Christiansen** to draft protocol for limited area coarse graining runs.

Ongoing: Completed a manuscript on the coarse graining analysis for stochastic parametrisation. Following on from this the protocol will be drafted.

**Action 14 – Craig Bishop** to draft white paper to lever funding for data assimilation of unused datasets requiring high resolution simulations.

Ongoing.

**Action 15 – All members** to alert their seasonal forecasting groups to S2S proposal for simulations with and without SPPT.

Ongoing: NRL hope to contribute. CPTEC has not implemented SPPT. CMC group aware of effort. NCAR plans to contribute. ECMWF involved. WGNE will distribute protocol when available.

**Action 16 – All members** to encourage use of TIGGE and encourage contributing centres to attend ECMWF meeting 2-5 April 2019.

Done: NRL, NCEP, DWD, possibly CPTEC, sending reps to meeting. **Closed**

**Action 17 – All members** in NWP centres to consider their centre to submit high resolution control to TIGGE.

Ongoing: CMC to consider doing this after current data delivery issues worked out. Fanglin to contact TIGGE scientists directly about possibility of “pulling” the NCEP data. It was noted that high-resolution analyses would be useful for estimates of analysis uncertainty.

**Action 18 – All members** to be aware of Non-Hydrostatic modelling meeting at JMA in 16<sup>th</sup> Nov 18.

Done. Meeting has occurred. Abstracts and extended abstracts are available at [http://www.mri-jma.go.jp/Dep/fo/lab2/nhmws/Nonhydrostatic%20Modeling%20Workshop%20\(NHM\)%202018\\_program.html](http://www.mri-jma.go.jp/Dep/fo/lab2/nhmws/Nonhydrostatic%20Modeling%20Workshop%20(NHM)%202018_program.html). Closed

**Action 19 – Keith Williams and Mark Rodwell** to draft protocol for initial tendency comparison.

Ongoing.

**Action 20 - Caio Coelho** to circulate document on process-orientated verification to WGNE when complete (expected early 2019).

Ongoing: An initial draft of the document was prepared by Thomas Haiden (ECMWF and JWGFVR member) and is currently being revised by the JWGFVR. Once a final version is prepared the document will be circulated to WGNE.

**Action 21 - Caio Coelho** to consider how best for all centre’s to participate in process-orientated verification (is it for the code to be shared or for centre’s to send data to one person e.g. Thomas Haiden) for analysis.

Ongoing: The recommended way forward for all center’s to participate in process-orientated verification is for the code to be shared.

**Action 22 – All members** in NWP centres to consider submitting to CBS surface scores.

Ongoing: Several submitting precip. Are other surface scores available from ECMWF? DWD and ECMWF in contact about score mismatches. DWD/ECMWF to provide clarification on score calculation methodology. CMC hope to have scores submitted by end of the year and emphasize importance of process-based verification approaches in context of score intercomparison.

**Action 23 - Peter Gleckler and Caio Coelho** to make contact after March meeting on future of WCRP metrics. Identify a person/people who could sit on both JWGFVR and Climate precipitation panel and develop a plan on how to work together on precipitation evaluation.

Ongoing: Contact to be made after March.

**Action 24 – All members** to provide feedback to Nils Wedi regarding national efforts on scalability.

Ongoing: Feedback requested by August. NRL, JMA, CMC, Met Office plan to send feedback. NCAR will communicate with Nils concerning local NCAR efforts to unify atmospheric model dycores. Scalability of dycores – spectral element, MPAS (icosahedral) and FV3 (finite volume cubed sphere) is a consideration.

**Action 25 – All members** whose centres have undertaken precision (e.g. double vs single precision) studies to provide a presentation at WGNE34.

Ongoing: Several presentations likely at WGNE34

**Action 26 – All members** to consider development of dwarf components suitable for exascale testing.

Ongoing: JMA develops and uses following test case environment based on operational NWP model.

Global Advection model on the sphere (Euler, Semi-Lagrangian, Williamson et al. (1992) test case 1). Shallow water model (Euler and Semi-Lagrangian, Williamson et al (1992) test case 2, 5). Dry and without physics 3-D atmospheric model Regional Advection model Dry and without physics 2-D atmospheric model (mountain wave, density current and so on). ECMWF very active as part of ESCAPE and ESCPAE-2 (<https://www.geosci-model-dev-discuss.net/gmd-2018-304/>). Wits GCI has developed a stand-alone advection module for the cubed sphere, which forms part of the African-based ESM, but allows for separate exascale testing. With exascale, on our computing system, we mean using up to 30 000 CPUs.

**Action 27 – Julio Bacmeister** to report at WGNE34 on NCAR's investigations into the timescales on which systematic errors develop.

Ongoing: Underway.

**Action 28 – Francois Engelbrecht** to represent WGNE at CMIP6 meeting in March 2019.

Done: Francois unable to attend, but Mich is attending and will let WGNE know if WGNE participation/representation is needed. Francois can provide updates on CMIP6 verification through AR6 at WGNE34. Closed

**Action 29 – All members** to check whether publicly available verification results (esp. precipitation) are available at their centre and send link to Elena.

Done: Several centers have sent sites to Elena, include these: NCEP website [https://www.emc.ncep.noaa.gov/gmb/STATS\\_vsd/](https://www.emc.ncep.noaa.gov/gmb/STATS_vsd/) comparing forecast skill scores of major NWP systems. NRL's operational partner, FNMOC, has an extensive verification web site. <http://www.metoc.navy.mil/fnmoc/meteorology.html>. CMC website for scores including precip: [http://perfserv.cmc.ec.gc.ca/verification/index\\_new.html](http://perfserv.cmc.ec.gc.ca/verification/index_new.html). CESM2 results will be published as part of CMIP6. NCAR will send relevant information to Elena. Possible to link to JWGVR? Closed

**Action 30 – Co-chairs** to ensure developments in numerical methods features as part of WGNE34.

For WGNE-34

**Action 31 – Co-chairs** to draft white paper on how WGNE might fit into the proposed WCRP structure and circulate to members for comment.

Ongoing: Mich provided an update on the telecon. Keith will create a draft to circulate in WGNE by mid-February with the goal to provide it to Mich by early March.

**Action 32 – Co-chairs** to discuss with Michel Rixen membership of exofficios mailing list. **All** to use both members and exofficios mailings lists when circulating information.

Done. Mich is still working on a few technical issues. Closed

**Action 33 – Gunther Zangl** to identify potential dates for WGNE34, avoiding w/b Oct 7 2019.

Done. WGNE34 will start on Tuesday morning 24 September and run through a half day on Friday 27 September. **Closed.**

### **Actions from WGNE-32**

**Action 12 – WGNE members** to provide Elena Astakhova with email addresses to extend/update mailing list for blue book. *Updates still required, especially where the format of email addresses has changed.*

Ongoing but presumably almost complete: Elena will ask members for help with the addresses in February when she sends the call for contributions to the Blue book.

**Action 19 – Michel Rixen** to close WMO WGNE website at beginning of January 2018 with a redirect to new website. *Will be done once transfer of archive is complete.*

Done. **Closed.**

### **Ongoing actions from WGNE-31**

**Action 27 - Ariane Frassoni** to request Saulo Freitas to include estimates of statistical significance of the impacts of aerosols in the case studies. Ariane to continue working on this until the end of the year.

Ongoing: has been working on the paper that describes the results of the WGNE Aerosol experiment (phase 1). He has submitted a proposal to BAMS in order to check the possibility of publication, that was accepted. Saulo will contact the co-authors to request contributions in the next months.

## 4) Next WGNE meeting

WGNE-34 will take place during the week of 23-27 Sept 2019 at DWD in Offenbach, Germany.

The meeting will start most likely on Tuesday (24 Sep) morning, and end on Thursday evening of Friday noon. Guenther and Mich will get in touch over the next month or so to start the planning.

## 5) Meetings of interest

- Workshop on Predictability, dynamics and applications research using the TIGGE and S2S ensembles, ECMWF, 2-5 April 2019,

<https://www.ecmwf.int/en/learning/workshops/workshop-predictability-dynamics-and-applications-research-using-tigge-and-s2s-ensembles>

- PDEs on the sphere 2019, 29 April – 3 May, Montreal, Quebec, Canada  
<http://collaboration.cmc.ec.gc.ca/science/pdes-2019/index-en.html>,  
<https://easychair.org/cfp/PDEs-2019>
- ECMWF will run a workshop on 10-14 June 2019 on observational campaigns for better weather forecasts. The workshop goal is to strengthen the links between observational campaigns and Numerical Weather Prediction (NWP). Further details about the workshop can be found at: <https://www.ecmwf.int/en/learning/workshops/workshop-observational-campaigns-better-weather-forecasts>
- ECMWF Annual Seminar, Subseasonal and seasonal forecasting: recent progress and future prospects, Reading, 2-5 September 2019,  
<https://www.ecmwf.int/en/learning/workshops/annual-seminar-2019>
- 18-21 November Workshop: Stratospheric modelling, predictability and influence on the troposphere (website currently being setup, contact Inna Polichtchouk (@ECMWF) for questions)

## 6) Next conference call

It was agreed to hold the next conference call on either 13 or 14 May, right after the WCRP 40<sup>th</sup> session of the WCRP Joint Scientific Committee. Mich will proceed with a doodle poll to refine time and date.