

## 47th Session of the WCRP Joint Scientific Committee (JSC)

*Overarching content/goal: To provide an update on progress made during the last year, and to identify issues etc. in advance of the JSC meeting. This will allow more discussion and less reporting at the JSC meeting itself.*

- *Use this template to provide additional information you will not have time to present – it will be used by the JSC in decision making and as a record*
- *The sections below reflect those requested for the presentation, so please add additional context as you see fit. You may of course add anything else you would like the JSC to be aware of*
- *Please work with your JSC liaison (if you have) and your WCRP secretariat contact point*

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### Update report for the WCRP Joint Scientific Committee

#### APARC

#### 1. Key highlights since the last JSC meeting (May 2025) (in particular strategic publications/assessments that are direct outcomes of your activity)

- *What have been the main foci of your activity over the last year (particularly anything new)*
- *What have been the key outputs (assessments, high-level paper, databases, and other products)*
- *Are there any key societal and/or policy benefits (including any links to climate “services”) you feel are worth highlighting?*
- *Any fundraising initiatives to highlight, particularly if successful?*
- Many of our highlights can be found in our newsletter:
  - July 2025: [https://aparc-climate.org/wp-content/uploads/2025/08/APARCnewsletter65Jul25\\_final.pdf](https://aparc-climate.org/wp-content/uploads/2025/08/APARCnewsletter65Jul25_final.pdf)
  - Jan 2026: [https://aparc-climate.org/wp-content/uploads/2026/01/APARCnewsletter66Jan26\\_final.pdf](https://aparc-climate.org/wp-content/uploads/2026/01/APARCnewsletter66Jan26_final.pdf)
- November 2025: **ECR School on AI for Climate & Weather Forecast in Dakar, Senegal.** 47 in-person participants. <https://sites.google.com/view/ai4climateschool>
- The publication of the **Hunga Volcanic Eruption Atmospheric Impacts Report** should again be highlighted here, as it was the main achievement of last year:
  - APARC, 2025: The Hunga Volcanic Eruption Atmospheric Impacts Report. Yunqian Zhu, Graham Mann, Paul A. Newman, and William Randel (Eds.), APARC Report No. 11, WCRP-10/2025, doi: 10.34734/FZJ-2025-05237, available at [www.aparc-climate.org/publications/](http://www.aparc-climate.org/publications/)

- **Special issues** with several new publications in the last year:
  - The SPARC Reanalysis Intercomparison Project (S-RIP) Phase 2 (ACP/WCD inter-journal SI):  
[https://acp.copernicus.org/articles/special\\_issue1242.html](https://acp.copernicus.org/articles/special_issue1242.html)  
 14 published papers (April 2026)
  - Stratospheric impacts on climate variability and predictability in nudging experiments: (SNAP, QBOi; WCD/GMD inter-journal SI):  
[https://wcd.copernicus.org/articles/special\\_issue1297.html](https://wcd.copernicus.org/articles/special_issue1297.html)  
 9 published papers (April 2026)
- Further publications from our activities:
- OCTAV-UTLS:
  - Millán, L., Hoor, P., Hegglin, M. I., Manney, G. L., Jeffery, P. S., Weyland, F. M., et al. (2025). Ozone trends in the upper troposphere-lower stratosphere using equivalent latitude-potential temperature coordinates. *Geophysical Research Letters*, 52, e2025GL118651. , <https://doi.org/10.1029/2025GL118651>
  - Tinney, E. N. and Randel, W. J.: Characterizing variability and vertical structure of water vapor in the extratropical lower stratosphere, *EGUsphere* [preprint], <https://doi.org/10.5194/egusphere-2026-412>, 2026.
- QUOCA:
  - Orbe, C., et al., 2026. Experimental protocol for phase 1 of the APARC QUOCA (QUasibiennial oscillation and Ozone Chemistry interactions in the Atmosphere) working group. *Geoscientific Model Development*, 19 (2), 2026
  - Kawatani, Y., et al, 2025. QBOi El Niño–Southern Oscillation experiments: overview of the experimental design and ENSO modulation of the QBO. *Weather and Climate Dynamics*.
  - Naoe, H., et al, 2025. QBOi El Niño–Southern Oscillation experiments: teleconnections of the QBO. *Weather and Climate Dynamics*.
  - Elsbury, D., et al, 2026. QBOi El Niño Southern Oscillation experiments: assessing relationships between ENSO, MJO, and QBO. *Weather and Climate Dynamics*.
  - Andrews, M.B., et al, 2026. Extratropical teleconnections in a multi-model ensemble nudged towards the observed QBO. *Weather and Climate Dynamics*
- ATC:
  - Early-career led paper on anomalous stratospheric trends (Sweeney et al. 2025)
  - Ongoing, multiple BAMS State of the Climate contributions (Dunn et al. 2025)
  - New tropospheric-stratospheric RO CDRs published (Zhou et al. 2025; Starr and Randel 2025)
  - Observed changes of tropopause temperature and height (Ladstädter et al. 2025)
  - Human influence on climate detectable in late 19thc. – a thought experiment (Santer et al. 2025)
  - High-impact study: modeled-vs-observed atmospheric temperature trends (Santer et al. 2026)

- Solaris Heppa:
  - Polar mesospheric ozone loss initiates downward coupling of solar signal in the Northern Hemisphere, Seppälä et al., Nat Commun, 2025 (high level paper)
  - Revisiting the SATIRE-S irradiance reconstruction, Chatzistergos et al., A & A, 2025
  - SATIRE-S (1974-2025; Chatzistergos et al., A & A, 2025) and SATIRE-T (1650-2025; Temaj et al., A & A, 2026) irradiance reconstructions (databases)
  - Influence of energetic electron precipitation on wind power generation in European countries mediated by the polar vortex, Juntunen et al., Space Weather, 2025
  - Assessment of the 11-year solar cycle signals in the middle atmosphere during boreal winter with multiple model ensemble simulations, Huo et al., ACP, 2025
- DynVar:
  - Dingley, B., Anstey, J. A., Abalos, M., Abraham, C., Bergman, T., Bock, L., Fiddes, S., Hassler, B., Kramer, R. J., Luo, F., O'Connor, F. M., Šácha, P., Simpson, I. R., Wilcox, L. J., and Zelinka, M. D.: CMIP7 Data Request: atmosphere priorities and opportunities, Geosci. Model Dev., 19, 2945–2984, <https://doi.org/10.5194/gmd-19-2945-2026>, 2026.
- CCMi:
  - Benito-Barca, S., et al., Recent Lower Stratospheric Ozone Trends in CCMi-2022 models: Role of Natural Variability and Transport, J. Geophys. Res., 130, e2024JD042412. doi:10.1029/2024JD042412, 2025.
  - Tilmes, S., et al. Stratospheric Aerosol Intervention experiment for the Chemistry-Climate Model Initiative, Atmos. Chem. Phys., 25, 6001 – 6023, doi:10.5194/acp-25-6001-2025, 2025
- CEDA Database used intensively for our activities.

## 2. Future Plans and priorities

- *What are your plans over the next year?*
- *What are your plans in the longer term, including activities sunsetting or planning to become part of other activities. What new activities do you have spinning up?*
- The **APARC General Assembly** in Pune, India from 12 – 16 October 2026 is the main focus of our work for the next half year.
- **SNAP**
  - **Activity 1: SNAP C3S Seasonal Model Project** (leader: Simon Lee, U. St Andrews, UK)  
This is a multimodel analysis of the stratosphere and its role in seasonal prediction with specific focus on model biases and extreme events. The online kick-off meeting will be held on 23<sup>rd</sup> April.

- **Activity 2: 2nd phase of SNAPSI (SNAPSI-O3)** (leader: G. Chiodo, CSIC, Spain)  
The main goal is to analyze the role of ozone (and stratospheric water vapor) for surface predictability by means of a new set of ensemble experiments of S2S models with different ozone fields. ~7 modelling centers have already committed to perform these simulations.
- **ACAM**
  - ACAM core leadership group is working on a clarity of ACAM's next step. Currently, it is not clear who would be taking on the co-leads.
  - After the 13 years (2013-2025) successful community building, we need to be taking time to consider what the science needs are in next phase, after fulfilling many of the original ACAM goals.
  - We also need to be considering our close relationship with IGAC-MANGO which brings Asian leadership together but does not have the broad community participation that ACAM offers.
  - We need time before responding to the additional requests from the SSG. We plan to provide our decision (sunset vs continuing) in 2026.
- *Outline any plans for raising additional funds?*
- COST (European Cooperation in Science and Technology) is a European funding scheme that supports research networks by promoting coordination, mobility, and training. It provides approximately €150k per year for up to four years. For APARC, COST is particularly relevant because it aligns well with its needs in coordination, mobility, and training. It could help offset decreasing WCRP/APARC funding by leveraging external resources, while also anchoring part of the activities regionally in Europe and freeing up APARC capacity for broader global initiatives.

### **3. Suggestions, Issues or Challenges**

- *Are there any key issues or challenges for the JSC to consider. Funding of course will always be a challenge but are there particular issues relevant to your activity, or for that matter for the broader community?*

### **4. Any other points or issues you wish to include**

- *Please let us know of anything else you would like the JSC to be aware of.*