

climate change initiative

→ CLIMATE MODELLING USER GROUP

CMUG Integration Meeting Plans for obs4MIPs in phase 2

24-25 October 2022, Frascati, Italy

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Working with Obs4MIPs to make ESA CCI products available for model intercomparison projects (MIPs)

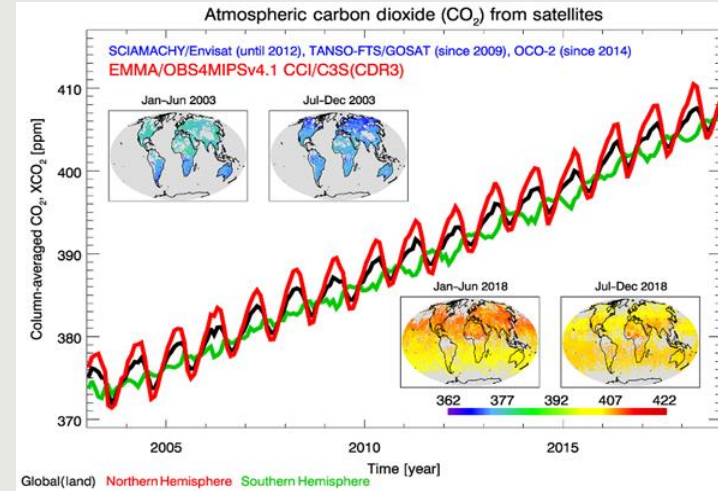
Obs4MIPs (Observations for Model Intercomparison Projects) is a climate model community initiative to encourage widespread uptake of satellite observations for climate model verification and development.

ESA's Climate Modelling Working Group (CMUG) is working with the ESA CCI projects to include as many CCI ECV datasets as possible on Obs4MIPs to enable their use by a wide variety of research.

To date the following CCI products are included:

- Aerosol
- GHG (CO₂ and Methane)
- SST
- Cloud

Figure 1: Overview of the XCO₂ CCI_GHG data set from obs4MIPs. Shown are the time series over land for three latitude bands (global, black line; Northern Hemisphere, red; Southern Hemisphere, green) and global maps (half-yearly averages at 1° x 1° obtained by gridding (averaging) the merged Level 2, i.e., EMMA, product). From Reuter et al. (2020).



These data can now be easily compared to CMIP6 data and to other obs4MIPs datasets facilitating their use in high profile publications such as IPCC reports which draw heavily on results from CMIP in their assessments.

Reference: Reuter, M., Buchwitz, M., Schneising, O., Noël, S., Bovensmann, H., Burrows, J. P., Boesch, H., Di Noia, A., Anand, J., Parker, R. J., Somkuti, P., Wu, L., Hasekamp, O. P., Aben, I., Kuze, A., Suto, H., Shiomi, K., Yoshida, Y., Morino, I., Crisp, D., O'Dell, C. W., Notholt, J., Petri, C., Warneke, T., Velasco, V. A., Deutscher, N. M., Griffith, D. W. T., Kivi, R., Pollard, D. F., Hase, F., Sussmann, R., Té, Y. V., Strong, K., Roche, S., Sha, M. K., De Mazière, M., Feist, D. G., Iraci, L. T., Roehl, C. M., Retscher, C., and Schepers, D. (2020): Ensemble-based satellite-derived carbon dioxide and methane column-averaged dry-air mole fraction data sets (2003–2018) for carbon and climate applications, *Atmos. Meas. Tech.*, 13, 789–819, <https://doi.org/10.5194/amt-13-789-2020>.



- Review existing obs4MIPs content
- User requirements: current and next 5–8 years. Through one-to-one meetings, to support the operational evaluation of both global and regional climate models
- Collect and analyse user feedback on system features
- Plan for outreach to raise awareness among the model evaluation community
- Review available tools to assist with the preparation of data sets for obs4MIPs
- Examine the potential for synergy with other CMIP infrastructure developments
- obs4MIPs User Workshop in 2023

Waliser et al., 2020 <https://doi.org/10.5194/gmd-13-2945-2020>



Cooperate with:

- WCRP obs4MIPs Task Team
- CMIP IPO
- ESMO IPO
- WCRP Secretariat

Include experts on:

- Satellite EO
- in situ Earth observation
- climate modelling (global, regional, reanalysis, ensembles)
- climate model evaluation



- Inclusion of reanalysis data
- Inclusion of in situ datasets
- Higher resolution data
- Inclusion of broad range of datasets
- Uncertainty information
- Data storage
- Platforms
- Accessibility/searchability/useability



Obs4MIPs is an international initiative, not just for CCI data

Other data providers need to be consulted, e.g. EUMETSAT, NASA, JMA, NOAA

Solutions for future obs4MIPs must work for wide range of datasets



Workshop planned for April 2023 in Vienna, to coincide with EGU

All welcome - please contact me if you would like to be involved

