

# An update on obs4MIPs and CREATE

Peter J. Gleckler  
LLNL/PCMDI

*Both efforts strive to bring reference data closer to the CMIP model evaluation community*

## WDAC Observations for Model Evaluation Task Team (2016-2020)

Peter Gleckler, co-chair, PCMDI  
Simon Pinnock, incoming co-chair, ESA replacing Duane Waliser (JPL)  
Mike Bosilovich, GSFC/NASA  
Helene Chepfer, IPSL  
Carol Anne Clayson, WHOI  
Veronika Erying, DLR  
Robert Ferraro, JPL/NASA  
Pierre-Phillipe Mathieu, ESA  
Jerry Potter, GSFC  
Roger Saunders, UKMO  
Jörg Schulz, EUMETSAT  
Karl Taylor, PCMDI  
Jean-Noël Thépaut, ECMWF

Additional regular contributors: Otis Brown, Michel Rixen  
Tsengdar Lee (NASA) and Renu Joseph (DOE)  
Luca Cinquini (JPL) – CoG technical support  
Denis Nadeu (PCMDI) – CMOR development  
Paul Durack (PCMDI) – Data specifications  
Sophie Cloché (IPSL) – CFMIP archive  
Jim Biard (NCEI) and Matthias Tuma (WCRP) – beta testers  
... and many others

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# Collaborative Reanalysis Technical Environment (CREATE) Current Status

Ana4MIPs is superseded by CREATE

CREATE includes monthly and 6hr data for standard CMIP5 variables

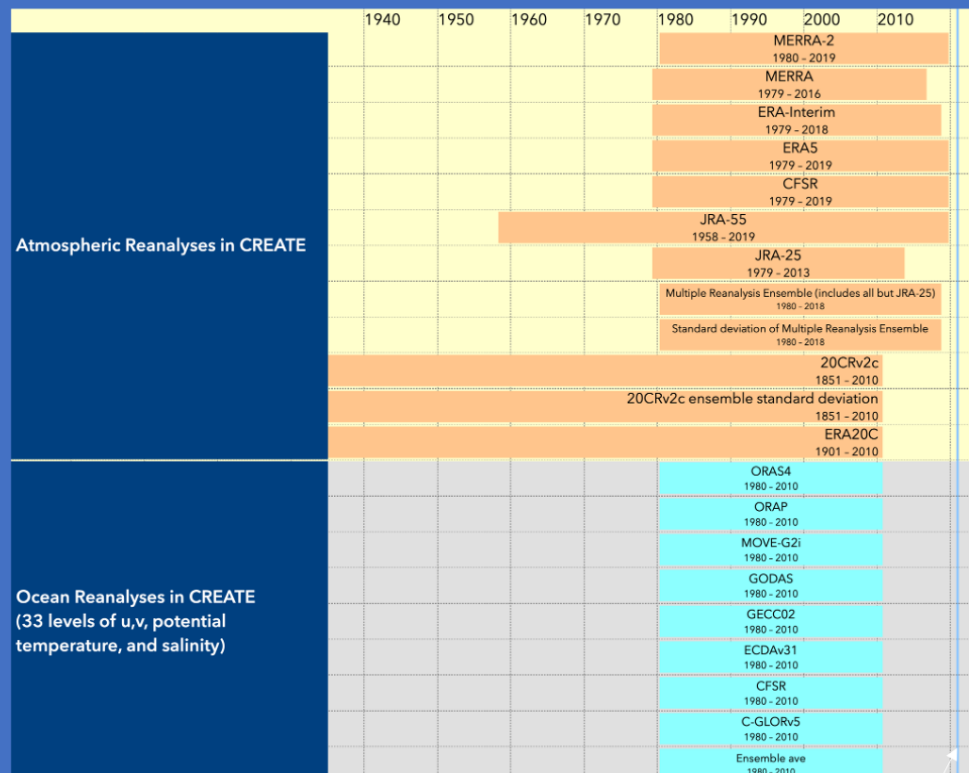
Subset of daily precipitation

Monthly multiple reanalysis ensemble (MRE3)

Discontinued: JRA-25, MERRA, and ERA-Interim

Other projects: monthly ocean reanalysis on the same grid

Available in ESGF and on NASA THREDDS server



Potter, G. L., Carriere, L., Hertz, J., Bosilovich, M., Duffy, D., Lee, T., & Williams, D. N. (2018). Enabling Reanalysis Research Using the Collaborative Reanalysis Technical Environment (CREATE), *Bulletin of the American Meteorological Society*, 99(4), 677-687. <https://journals.ametsoc.org/view/journals/bams/99/4/bams-d-17-0174.1.xml>

Present day

Courtesy Jerry Potter



# CREATE Future Plans

Bi-annual updates of  
atmospheric  
reanalyses and  
MRE3 ensemble

Improve automation  
for preparation of  
reanalyses

Further research  
into the value of the  
ensemble

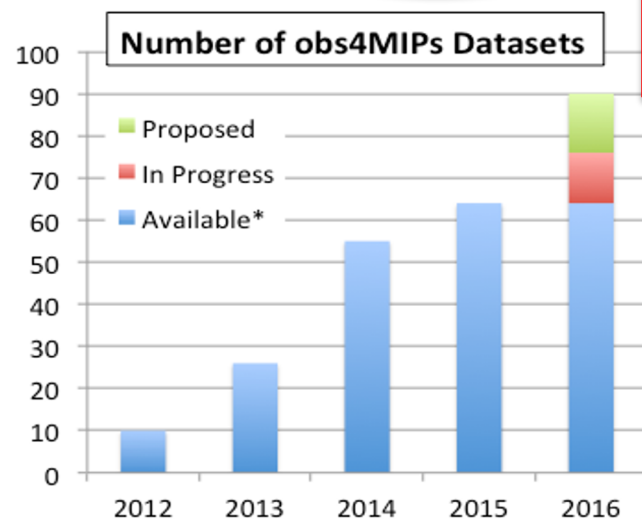
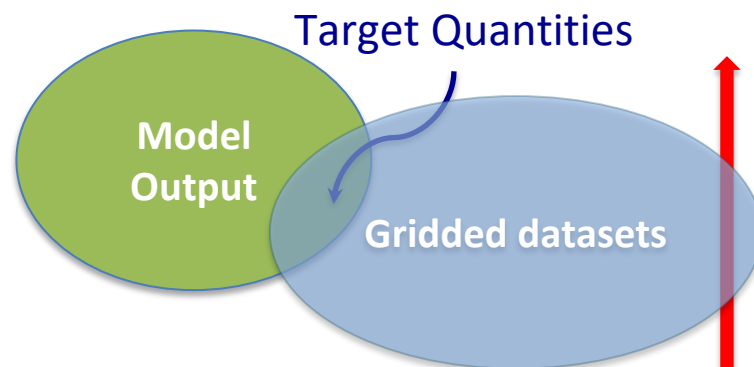
Support for possible  
future coupled  
model reanalysis

Produce set of  
ensembles minus  
each individual  
ensemble

Research paper in  
progress about  
values of multiple  
reanalysis ensemble



- A project for identifying, documenting and disseminating observations for climate model evaluation in WCRP model intercomparisons, notably CMIP.
- Data (and tech notes) accessible with the distributed CMIP model output via ESGF, adhering to same conventions
- Guided by the WCRP Data Advisory Council obs4MIPs Task Team



# Progress in 2020

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- Waliser et al: Obs4MIPs for CMIP6, GMD 13, 2945–2958, 2020  
[doi.org/10.5194/gmd-13-2945-2020](https://doi.org/10.5194/gmd-13-2945-2020)
- Management of obs4MIPs metadata conventions now unified on Github and upgraded from python 2.7 to python 3
- Some NASA datasets updated on GSFC node
- Substantial progress advancing ESA CCI dataset preparation
- Several telecons with representatives from multiple agencies.

# obs4MIPs Dataset Suitability & Maturity Indicators

Waliser et al., 2020

Enables us to expand what data gets included in obs4MIPs

<b>Technical Requirements</b>		<b>Dataset Suitability and Maturity</b>			<b>Comparison Complexity</b>
Meets obs4MIPs data technical requirements	Includes obs4MIPs technical note information	Closeness or robustness of measurement to observed reference quantity	Maturity with respect to climate model evaluation	Provision for robust uncertainty information	Complexity of Model Observation Comparison
Data suitably processed with CMOR and/or consistent with obs4MIPs standards	Complete technical note information provided	Measurement approach provides a very close relationship to observation quantity	Multiple peer-reviewed examples of application to climate model evaluation	Uncertainty information provided per retrieval/grid point	Comparison can be made directly with CMIP model output variable
Largely complete with minor metadata inconsistencies	Technical note information incomplete and/or could be improved	Measurement approach requires complex and/or non-linear retrieval methods and/or subjective inferences/definitions	One peer-reviewed example of application to climate or component model evaluation.	General uncertainty information given relative to the methodology and dataset as a whole - backed by actual field/in-situ validation exercises	Comparison requires some simple post processing of CMIP output variable(s) (e.g. vertical integral or ratio of two variables)
Non-compliant. Should be removed from database!	Technical note not provided	Measurement approach requires significant use/influence from complex or weakly constrained model and/or has significant ambiguity in definition(s)	No peer-reviewed examples of application to model evaluation	No uncertainty information provided	Comparison requires complex processing of CMIP output (e.g. "simulator", budget calculation)

# Obs4MIPs

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You are at the CoG-CU node

Technical Support

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Instrument +  
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Variable Long Name +  
CF Standard Name +  
Data Node -  
☒ esgf-data.jpl.nasa.gov (16)

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results per page

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☐ Show All Replicas ☐ Show All Versions ☐ Search Local Node Only (Including All Replicas)


























































Search Constraints: ~~esgf-data.jpl.nasa.gov~~

Total Number of Results: 16

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Add all displayed results to Data Cart Remove all displayed results from Data Cart

Expert Users: you may display the search URL and return results as XML or return results as JSON

11. **obs4mips.RSS.SSMI.sfcWind.mon**  
Data Node: esgf-data.jpl.nasa.gov  
Version: 20160523  
Total Number of Files (for all variables): 2  
Full Dataset Services: [ Show Metadata ] [ List Files ] [ THREDDS Catalog ] [ WGET Script ] [ LAS Visualization ] [ summary ] [ Globus Download ]  
[                                                            

# Obs4MIPs Summary

- obs4MIPs was established with the expectation that like CMIP the work required (to prepare and publish datasets) would be distributed
- The effort to prepare/publish a single dataset is in most cases too onerous. This scales better with agency commitments, but it is still difficult and in any case is limiting

*Despite setbacks, interest in obs4MIPs remains strong*

- An effort to improve the process is being explored, involving centralizing processing codes into a unified github repository.
- NASA has expressed interest to contribute more data that is relevant to process-level studies (i.e., daily and sub-daily)
- A revitalization of the task team is in underway



# Links to related material

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- [CMIP6 data specifications \(google docs\)](#)
- [obs4MIPs data specifications](#)
- [obs4MIPs tables controlled vocabulary \(github\)](#)
- [Climate Model/obs Output Rewriter, CMOR \(website\)](#)



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