Documenting CMIP6 with ES-DOC

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Towards CMIP6 internationally coordinated climate modeling experiments: the role and use of modeling and observation research infrastructures















Home

Timeline

Phase 1

Phase 2

Phase 3

Phase 4

Links

Timeline

Phase 1

Protocols

Q1 2016 - Q2 2017



MIP

Experiment

Numerical Requirement



Spreadsheet, Script

Phase 2

Model Descriptions

Q2 2017 – Q4 2018



Model

Realm

Process



IPython, Questionnaire

Phase 3

Ensembles

Q3 2017- Q1 2019



Conformance

Ensemble

Simulation



Spreadsheet, Script

Phase 4

Post-Simulation

Q1 2018 – Q4 2019



Dataset Errata

Machine

Performance



IPython, Script

MIP

Experiment

Numerical Requirement Forcing Constraint Temporal Constraint

Ensemble Requirement

Multi-Ensemble

- Extensive interactions with WCRP & MIPs
- A single spreadsheet used to capture > 1000 documents
- Major task was mapping:

MIPs --> Experiments
Experiments --> Requirements

- Mandated by WCRP as reference CMIP6 experimental documentation
- Online @ documentation.es-doc.org/cmip6
- Creation tools: Spreadsheet, script

Timeline

Phase 1

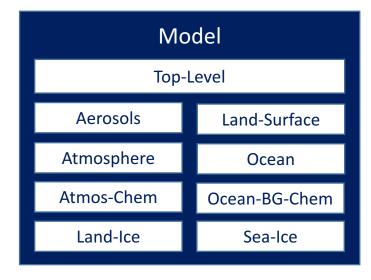
Phase 2

Phase 3

Phase 4

Links

Models



Realm Processes



- Realms defined by WCRP-CMIP, e.g. ocean
- ES-DOC co-ordinates with realm experts to define **specializations**:
 - Processes e.g. ocean advection
 - Properties e.g. monotonic flux limiter for vertical tracer
- ES-DOC co-ordinates with WGCM to define short tables
- Institutes create documents using various tools
- Creation tools: IPython, online questionnaire, script

Timeline

Phase 1

Phase 2

Phase 3

Phase 4

Links

Ensembles

Ensemble

Ensemble Member

Simulation

Conformance

- Ensemble document(s) auto-initialized when datasets are published
- Institutes must supply experimental requirement **conformances**:
 - A spreadsheet to be filled in with **default** conformances
 - A spreadsheet per MIP with **specific/non** conformances
- CMIP6 NetCDF files have a futher_info_url header which will link to the full set of published ensemble documentation
- Creation tools: Spreadsheet, Script

Machine

Performance

Dataset Errata

- After simulations have been run:
 - Metrics concerning HPC performance can be published
 - Performance information is linked to relevant ensembles
 - Creation tools: IPython
- As dataset errors are discovered:
 - Errata information is published
 - Persistent Identifier (PID) services are notified
 - Creation tools: Script



White Paper

http://bit.ly/2p3BgLb

Email

cmip6-help@es-doc.org

Further information

es-doc.org/cmip6

Published Documents

documentation.es-doc.org/cmip6

Social Media

twitter.com/esdocumentation













