



Met Office
Hadley Centre



WGCM activities

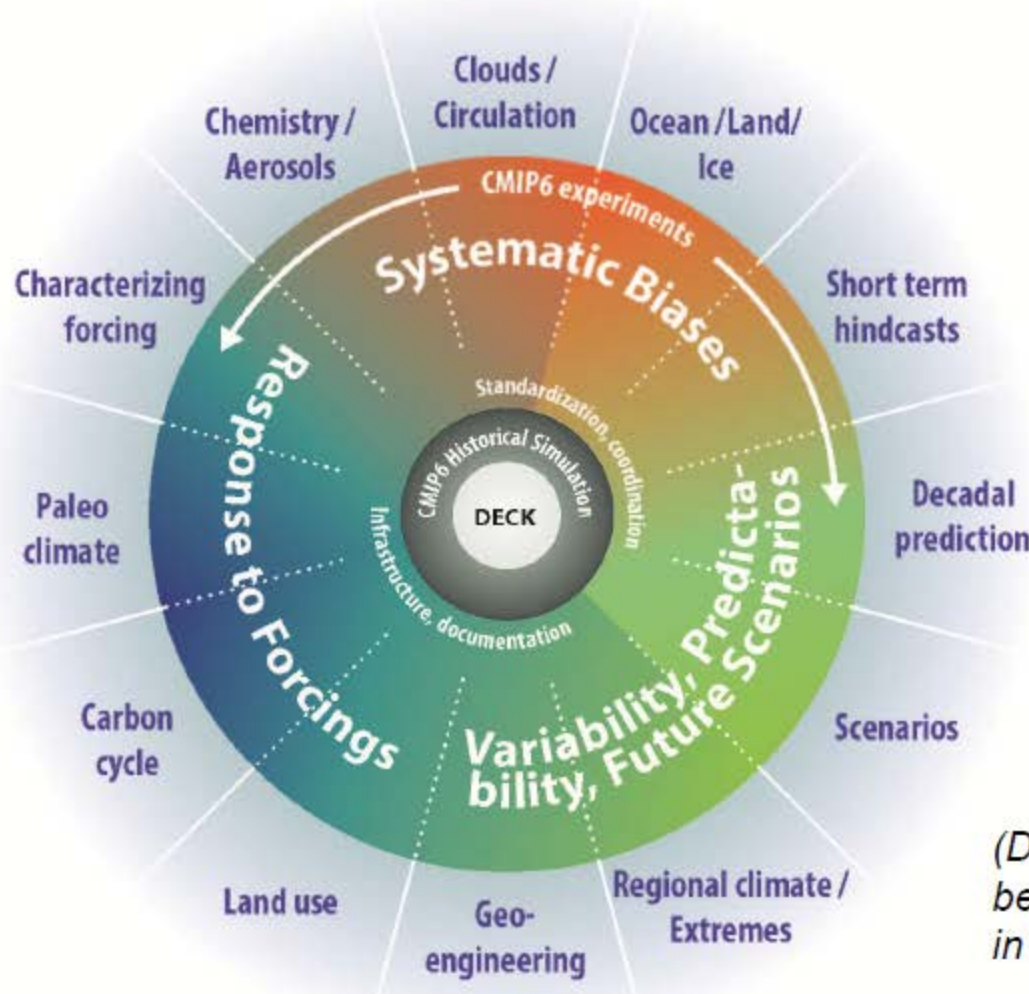
Catherine Senior and Sandrine Bony WGCM Co-Chairs, Veronika Eyring
CMIP panel chair

WCRP JSC meeting, Geneva, 9th April 2015

Summary of WGCM activities: 2014-2015

- **CMIP6:organisation and implementation**
 - Structure and plans now agreed
 - Timelines in place for MIP endorsement, forcing datasets and infrastructure
 - Now supported by the WGCM Infrastructure Panel (WIP)
 - Review of MIP proposals by modeling groups and WCRP GCs and core projects
- **Development of the WGCM-led Grand Challenge on Clouds, Circulation and Climate Sensitivity (covered by Bjorn's talk)**
- **Workshops/Meetings**
 - 08-11 July 2014: CFMIP general meeting (The Hague, Netherlands)
 - 25-30 May 2014: PMIP general meeting (Namur, Belgium)
 - 29 April - 01 May 2014: Obs4MIPs workshop (Washington, USA)
 - 24-25 April 2014: Pattern scaling workshop (Boulder, USA)
 - 23-28 March 2014: GC "Clouds, Circulation and Climate Sensitivity" workshop (Rotta-Egern, Germany)
 - 8-10th September 2014: IPCC-WCRP workshop (Bern, Switzerland)
 - 6-8th October 2014: Model tuning workshop (Grainau/Garmisch-Partenkirchen, Germany)
 - 8-10 October 2014: WGCM-18 (Grainau/Garmisch-Partenkirchen, Germany)
 - 26 February 2015: WIP meeting at GO-ESSP, Abingdon UK
 - 23-28 March 2015: GC meeting on Earth's Climate Sensitivities (Ringberg, Germany)

WCRP Grand Challenges: (1) Clouds, circulation and climate sensitivity, (2) Changes in cryosphere, (3) Climate extremes, (4) Regional climate information, (5) Regional sea-level rise, and (6) Water availability, plus an additional theme on “Biogeochemical forcings and feedbacks”



DECK (entry card for CMIP)

- i. AMIP simulation (~1979-2014)
- ii. Pre-industrial control simulation
- iii. 1%/yr CO₂ increase
- iv. Abrupt 4xCO₂ run

CMIP6 Historical Simulation (entry card for CMIP6)

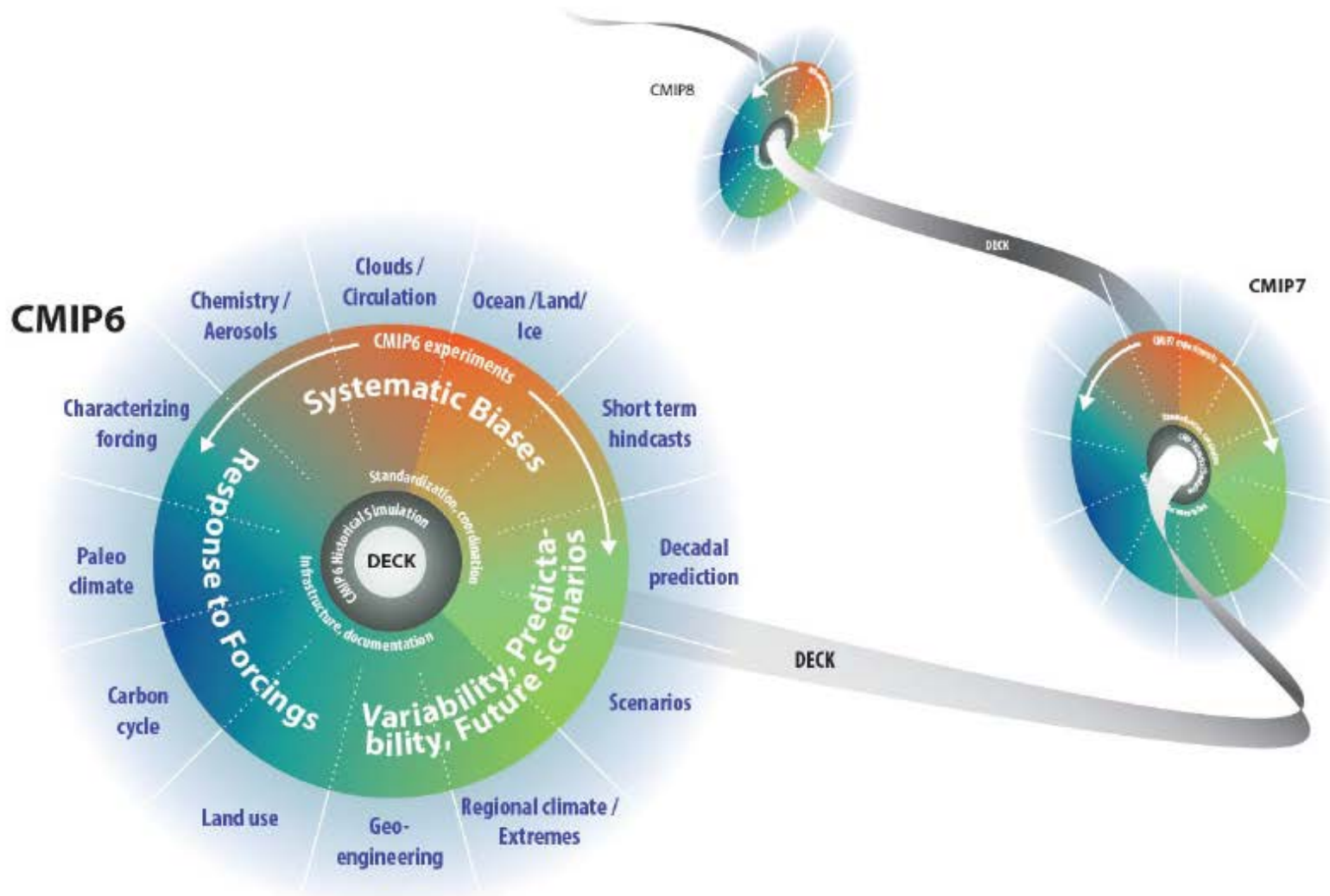
- v. Historical simulation using CMIP6 forcings (1850-2014)

(DECK & CMIP6 Historical Simulation to be run for each model configuration used in the subsequent CMIP6-Endorsed MIPs,

With proto-DECK experiments (LMIP, OMIP etc.) in CMIP6 Tier1

Note: The themes in the outer circle of the figure might be slightly revised at the end of the MIP endorsement process

CMIP Continuity



Note: The themes in the outer circle of the figure might be slightly revised at the end of the MIP endorsement process

CMIP6- Endorsed MIPs

Main Criteria for Endorsement

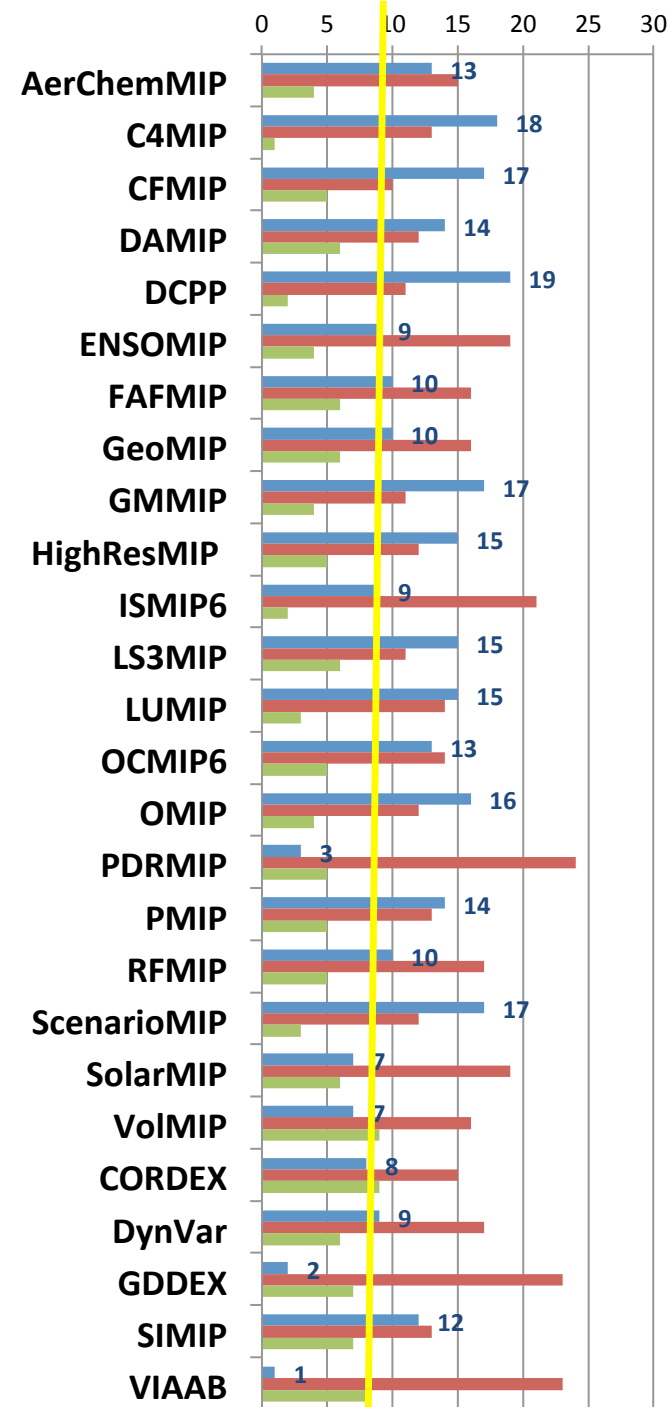
1. The MIP and its experiments address at least one of the key science questions of CMIP6.
2. The MIP demonstrates connectivity to the DECK experiments and the CMIP6 Historical Simulation.
3. The MIP adopts the CMIP modeling infrastructure standards and conventions.
4. All experiments are tiered, well-defined, and useful in a multi-model context and don't overlap with other CMIP6 experiments.
5. Unless a Tier 1 experiment differs only slightly from another well-established experiment, it must already have been performed by more than one modeling group.
6. A sufficient number of modelling centers (~8) are committed to performing all of the MIP's Tier 1 experiments and providing all the requested diagnostics needed to answer at least one of its science questions.
7. The MIP presents an analysis plan describing how it will use all proposed experiments, any relevant observations, and specially requested model output to evaluate the models and address its science questions.
8. The MIP has completed the MIP template questionnaire.
9. The MIP contributes a paper on its experimental design to the CMIP6 Special Issue.
10. The MIP considers reporting on the results by co-authoring a paper with the modelling groups.

* For "Diagnostic-MIPs" only non-experimental criteria apply

Current status of MIP engagement



- Participating
- Not Participating
- Don't Know Yet

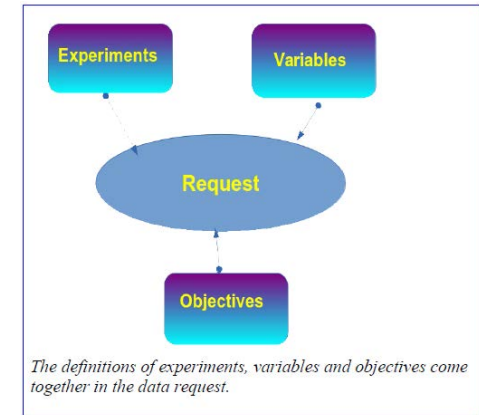


WGCM Infrastructure Panel (WIP)

Co-Chairs and contacts: V. Balaji and K. Taylor
<https://www.earthsystemcog.org/signal/list/wip>

Current Issues being tackled

1. ESGF/CoG – Fair recognition of modelling groups role in CMIP
Progress is being made on issues of use of sponsor logos on ESGF/CoG which we hope will allow continued use of infrastructure for CMIP
2. CMIP data request
WIP (Martin Juckes) co-ordinating data request for CMIP6 endorsed MIPs.
3. CMIP Documentation
International consortium, ES-DOC, will review under the guidance of WGCM via the WIP and two expert users



Other issues arising from WGCM-18

- Open access - fair use policy requiring data citation
- Common calendars, common grids
- Data standards and conventions (e.g CMOR, DRS)

Timelines

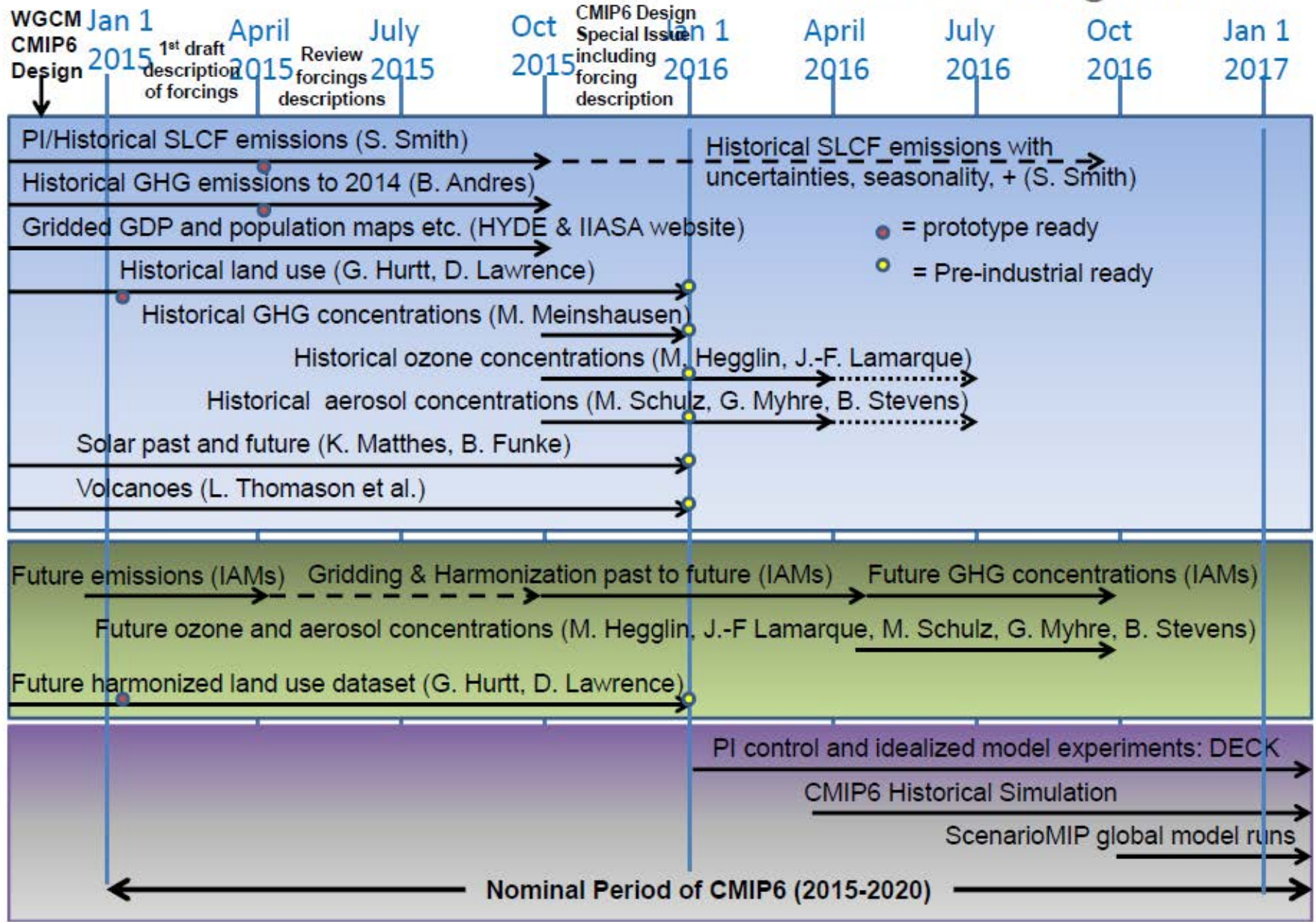
- MIP endorsement
 - Review process now complete (Jan/Feb 2015)
 - Final MIP proposals with experiment lists for all tiers (31st March 2015)
 - MIP endorsement by CMIP panel and WIP (30th April)
 - MIP descriptions in GMD special issue
- Data Request (Co-ordinated by Martin Juckes)
 - First input to the data requests from MIPs (March 2015)
 - Draft data request sent to modelling groups and MIPs (April 2015)
 - Feedback from modelling groups and MIPs plus 2nd input from MIPs (15 July 2015)
 - Near-final version of **CMIP6 Data Request** published (31 July 2015)
 - Feedback on the actual implementation back from model groups (15 October 2015)
 - Final CMIP6 data request agreed (October 2015 at **WGCM-19**)
- Forcing
 - Initial descriptions reviewed (March 2015)
 - Description of datasets in GMD special issue (December 2016)
 - Forcing datasets available to modelling groups to use (see next slide)

GMD special Issue on CMIP6 experimental design

Open 30th April 2015 to 31st December 2016

Finalize scenario choice, March 2015 (O'Neill, Tebaldi, van Vuuren)

CMIP6 Forcing Timeline



Plans for 2015-16

Workshops/meetings

- 22-28 March 2015: Climate Sensitivity Workshop – (Schloss Ringberg, Germany)
- 15 to 26 June 2015: WCRP 1st Summer School on Climate Model Development – (MPI-M, Hamburg, Germany)
- **20-23 October 2015: WCRP/FP7 EMBRACE Workshop on CMIP5 Model Analysis and Scientific Plans for CMIP6 (Dubrovnik, Croatia)**
- **18-20 October 2015: WGCM-19 (Dubrovnik, Croatia)**



Publications

- Clouds, Circulation and Climate Sensitivity (Bony, Stevens et al) - Nature Geoscience 8, 261–268 (2015) doi:10.1038/ngeo2398.
- GMD CMIP6 special issue (April 2015- December 2016)
- CMIP paper (Stouffer et al) BAMS, in preparation

Membership

2014 Rotations

New members: Bart van den Hurk, Pierre Friedlingstein

Rotated off: Natalie Mahowald and Colin Jones

Renewed: Bin Wang

2015 Rotations

New members: Simon Marsland (from WGOMD)

Rotated off: Tony Hirst

Renewed: Masa Kageyama, Bjorn Stevens, Detlef van Vuuren, Claudia Tebaldi

Co-chair: Sandrine Bony due to rotate off in 2015 but she has agreed to remain for 1 further year as potential identified successor will be available then