CMIP6 Model Analysis Workshop
25-28 March Barcelona

Final Discussion

1. **General questions (including questions on emerging topics other than ECS)**

   => please introduce yourself when you ask a question

2. **Emerging topics: ECS**

3. **A first look towards CMIP7**

4. **IPCC Deadlines**

5. **Next CMIP6 Analysis Workshop**

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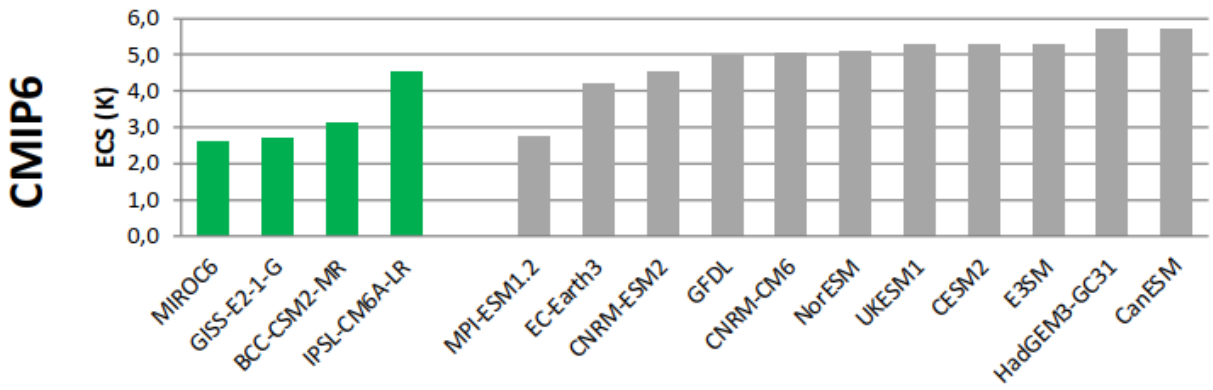
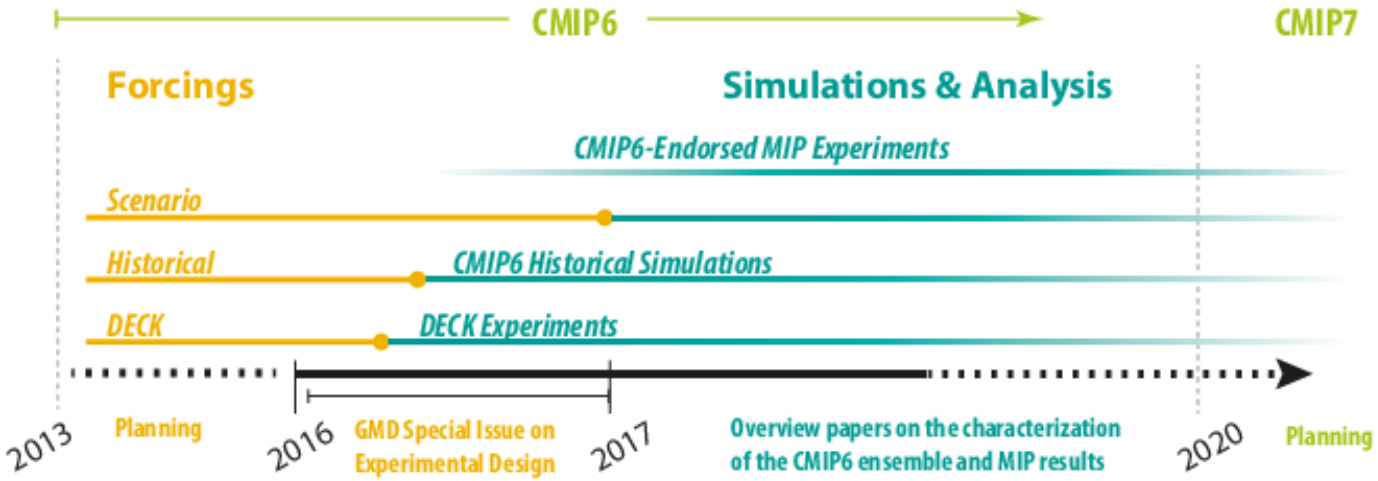
Emergent properties of the CMIP6 Ensemble

- Improvements have been made to models from CMIP5 to CMIP6, including new physical insights in the atmosphere, ocean, sea-ice, and land surface utilising new observations. In many cases, changes in the detailed representation of prognostic cloud and aerosol processes have been implemented.
- Consequences of model developments are now being carefully assessed
- Initial results show that some of the new CMIP6 models have a higher ECS than their CMIP5 counterparts (from about 6 years ago); the climate science community is actively investigating this important topic and peer-reviewed papers are already in the works.
- WGCM will work with the community to compile emerging ECS properties in a peer-reviewed perspective paper as input to the assessment of ECS in the IPCC AR6



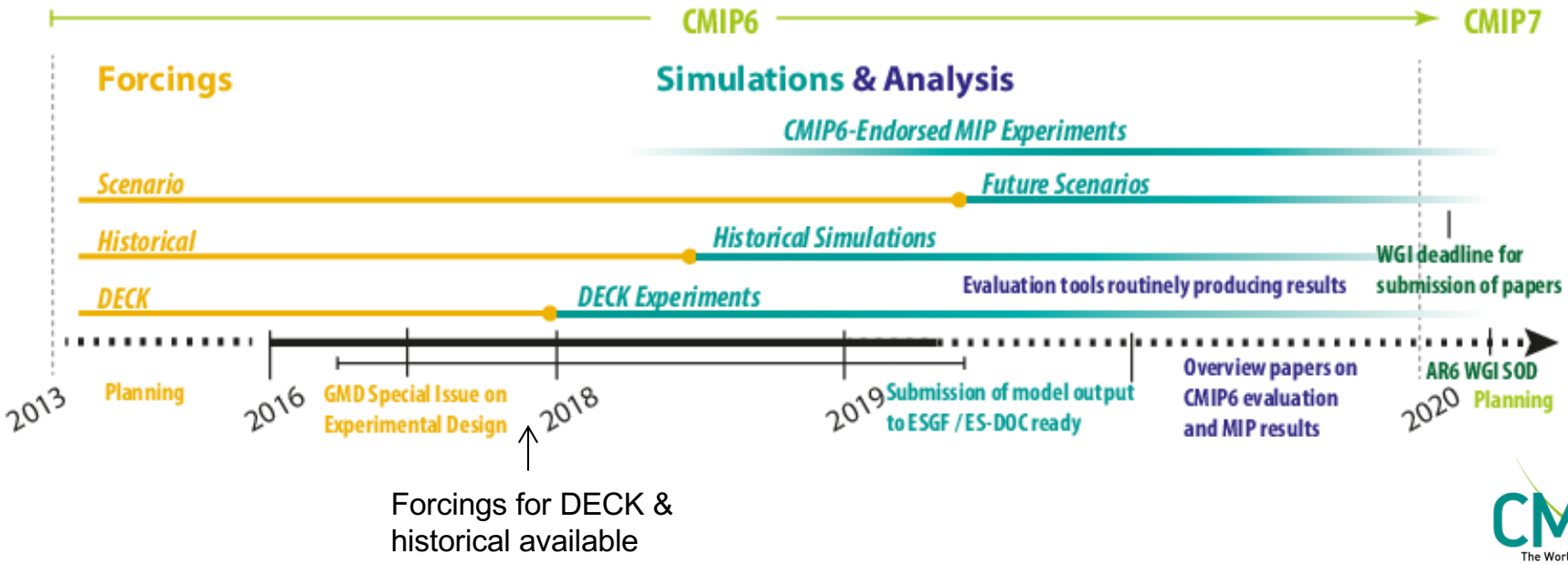
Planning for CMIP6 began in 2013, and the timeline was finalized before IPCC AR6 was initiated; but delays subsequently developed



Eyring et al., GMD, 2016

May 2016

This is where we are now (March 2019)



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Factors contributing to delays in the timeline– how can we do better?

- Essential inputs rely on single people and most of this work is unfunded, e.g.
  - Forcings
  - Data requests
- Though MIPs were entirely voluntary for modeling groups, most aspired to run many of the MIPs, with the consequence of a heavy human and computational load

What needs to be done?

- **Ensure timely delivery and enhanced quality control for the forcings** through program-level support
  - More continuous, ongoing and more institutionalized (avoid single-point of failures)
- **The growing dependency on CMIP products** by a broad research community and by national and international climate assessments means that basic CMIP activities, such as the **creation of** forcing datasets, the provision and archiving of CMIP products, and model development, require substantial efforts that must be better funded.

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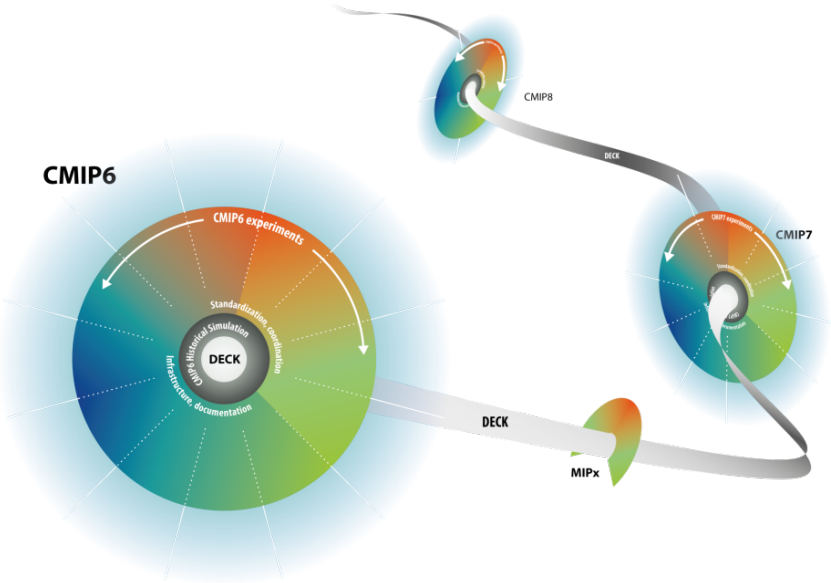
CMIP Continuity

- **New more distributed CMIP organization has been proven successful**
- **Further build on this and make full use of the continuous structure we established in CMIP6**

1. **Separation of the timescales for**
   - **"CORE EXPERIMENTS" REQUIRED FOR USERS (DECK, historical + possibly others)**
     - Can go on faster timescales
     - **More automatic infrastructure in place through program level support** (e.g. for forcings), also at the modelling centers (to reduce the burden)
   - **RESEARCH (CMIP6-Endorsed MIPs)**
     - Infrastructure also needs to support the CMIP6 Research Activities
     - Could go on longer timescales
2. **We have defined enough experiments and research questions in CMIP6** to fuel research over the next phase (CMIP7 fully building on CMIP6-Endorsed MIPs)



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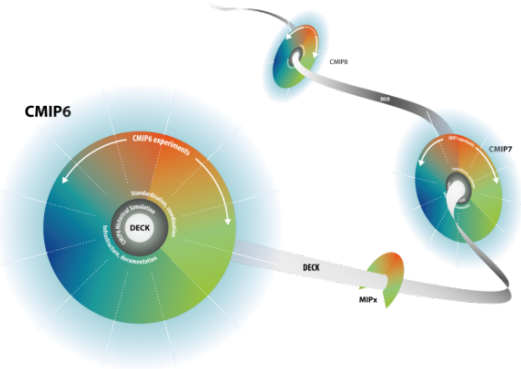
IPCC Deadlines

- **Modelling groups** are encouraged to submit model output as soon as possible (and ideally no later than Aug 2019), so it can be assessed in time for the Second Order Draft that is due early Jan 2020
- **31 Dec 2019** Literature submission cut off
- **15 Oct 2020** Cut-off date for accepted literature for inclusion in the Final Draft

CMIP6 Analysis Workshop

- As in previous CMIP phases (e.g. the CMIP5 analyses at this workshop) analyses of CMIP6 (multi-) model output **will continue for several more years**
- **CMIP model analysis workshops** will be held regularly to provide insight into what we are learning about the earth system through analysis of the CMIP data
- **Next CMIP6 Analysis Workshop in 2021** (location tbd)



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THANKS TO ALL OF YOU FOR COMING, FOR THE GREAT SCIENCE THAT YOU PRESENTED AND FOR THE INSPIRING ATMOSPHERE!

THANKS AGAIN TO BSC FOR HOSTING US AND TO WCRP, PRIMAVERA & EUCP FOR FINANCIAL SUPPORT!