

Modeling group's perspectives:

MIROC and NICAM

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with

MIROC development team

NICAM development team

* Passport is going to be expired



MIROC in CMIP5

Who are we

- ✓ Joint modeling group among AORI Univ of Tokyo, National Institute for Environmental Studies (NIES), and JAMSTEC

Model lineup

- ✓ **CGCM**
 - MIROC5 (T85L40+1deg)
 - MIROC4h (T213L56+0.25deg)
- ✓ **ESM**
 - MIROC-ESM (T42L80+1deg)
 - MIROC-ESM-CHEM (T42L80+1deg)



MIROC in CMIP6

Support for modeling activity

- ✓ Program for Risk Information on Climate Change (*'SOUSEI' program*), 2012-2016, 5000K USD



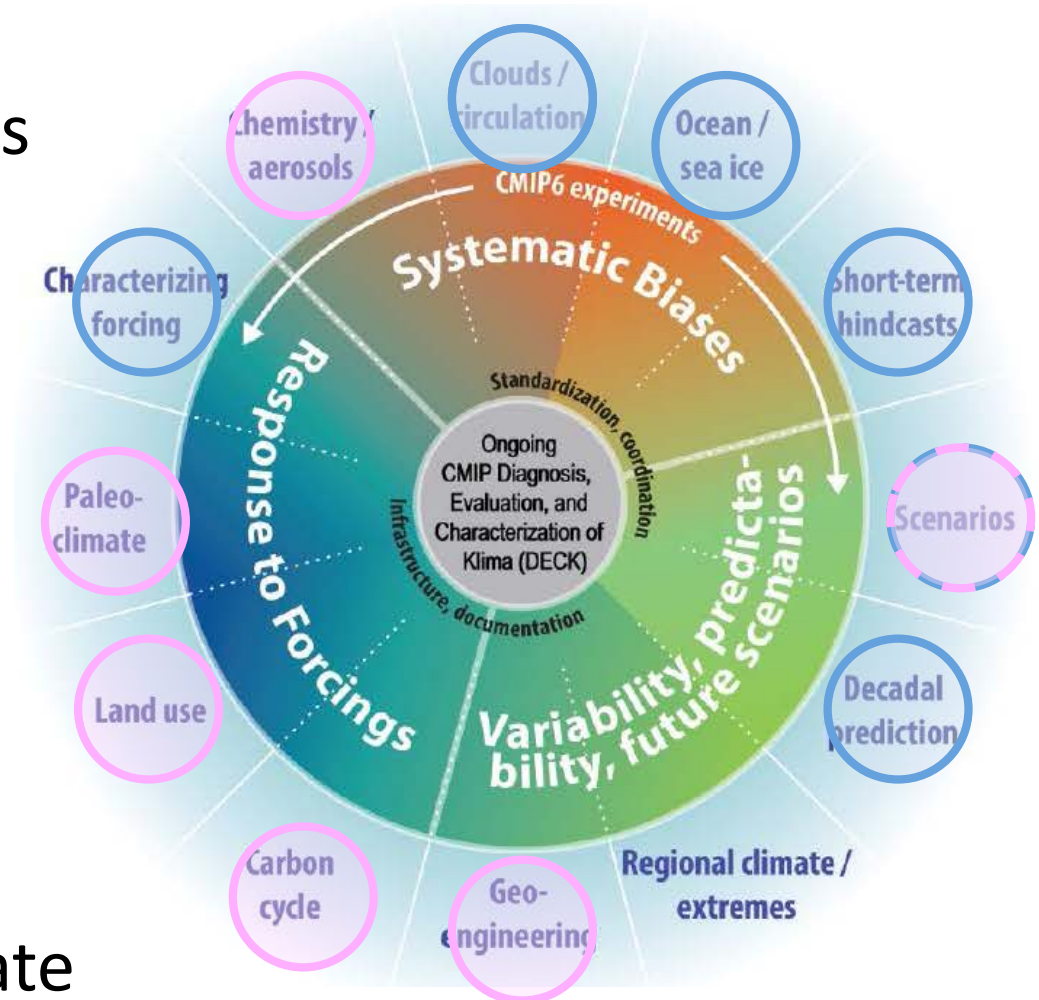
Model lineup

- ✓ CGCM
MIROC5 (T85L40+1deg) → MIROC6-CGCM (T85L56+1deg)
~~MIROC4h (T213L56+0.25deg)~~
- ✓ ESM
MIROC-ESM (T42L80+1deg) → MIROC6-ESM (T85L80+1deg)
~~MIROC-ESM-CHEM (T42L80+1deg)~~
- ✓ NICAM AGCM (7km/14km/28km)



CMIP6 experiments with MIROC/NICAM

- ✓ Both MIROC **CGCM** & **ESM** will participate in DECK
- ✓ SSC members in 10 MIPs
- ✓ **CGCM** will cover:
CFMIP, DCPP, DAMIP, FAFMIP, RFMIP, etc.
- ✓ **ESM** will cover:
ScenarioMIP, GeoMIP, ACMIP, C4MIP, LUMIP etc.
- ✓ NICAM likes to participate in MIPs (*eg HiResMIP*)

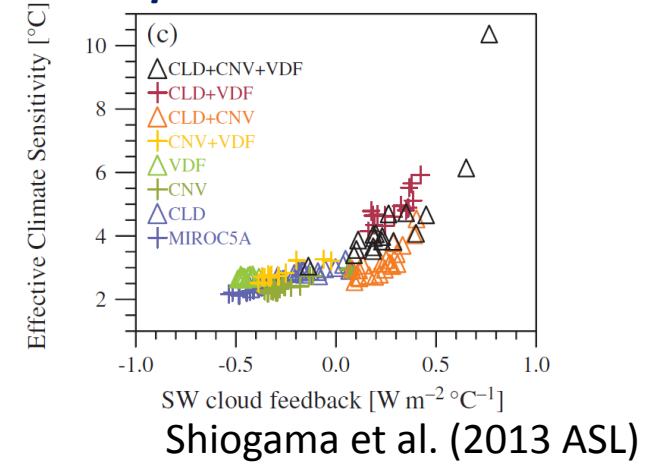


Model update plan & particular interests

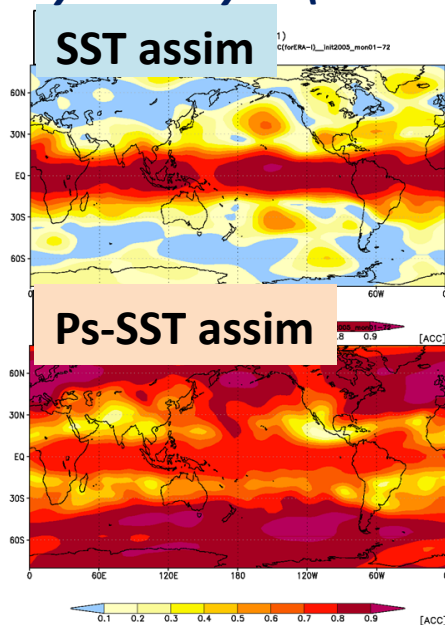
MIROC6-CGCM, NICAM

- ✓ Updated physics, but resolution similar to the AR5 model
- ✓ CFMIP experiments (→ Cloud GC)
- ✓ Decadal prediction w/ coupled EnKF
- ✓ D&A MIP (hiatus etc)

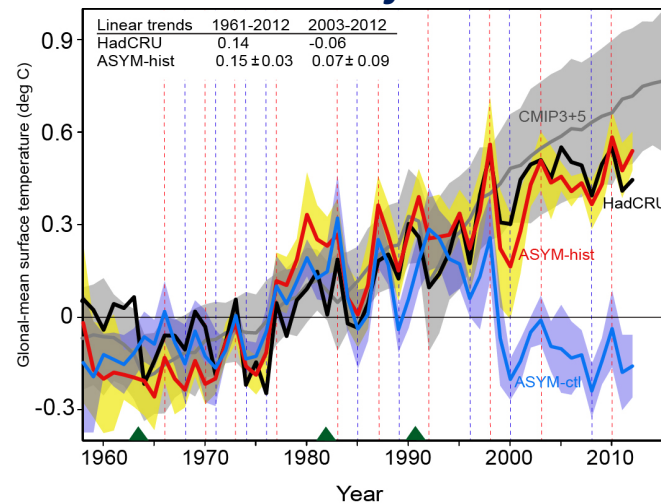
ECS dependence on schemes



100y reanalysis (Z500 ACC)

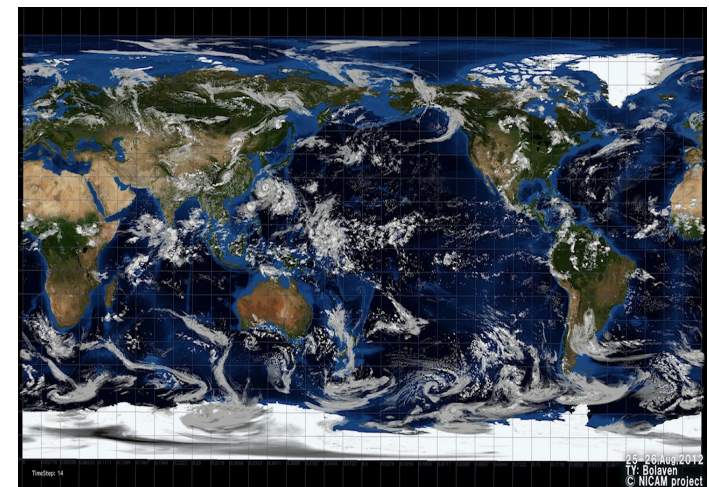


Attribution of hiatus

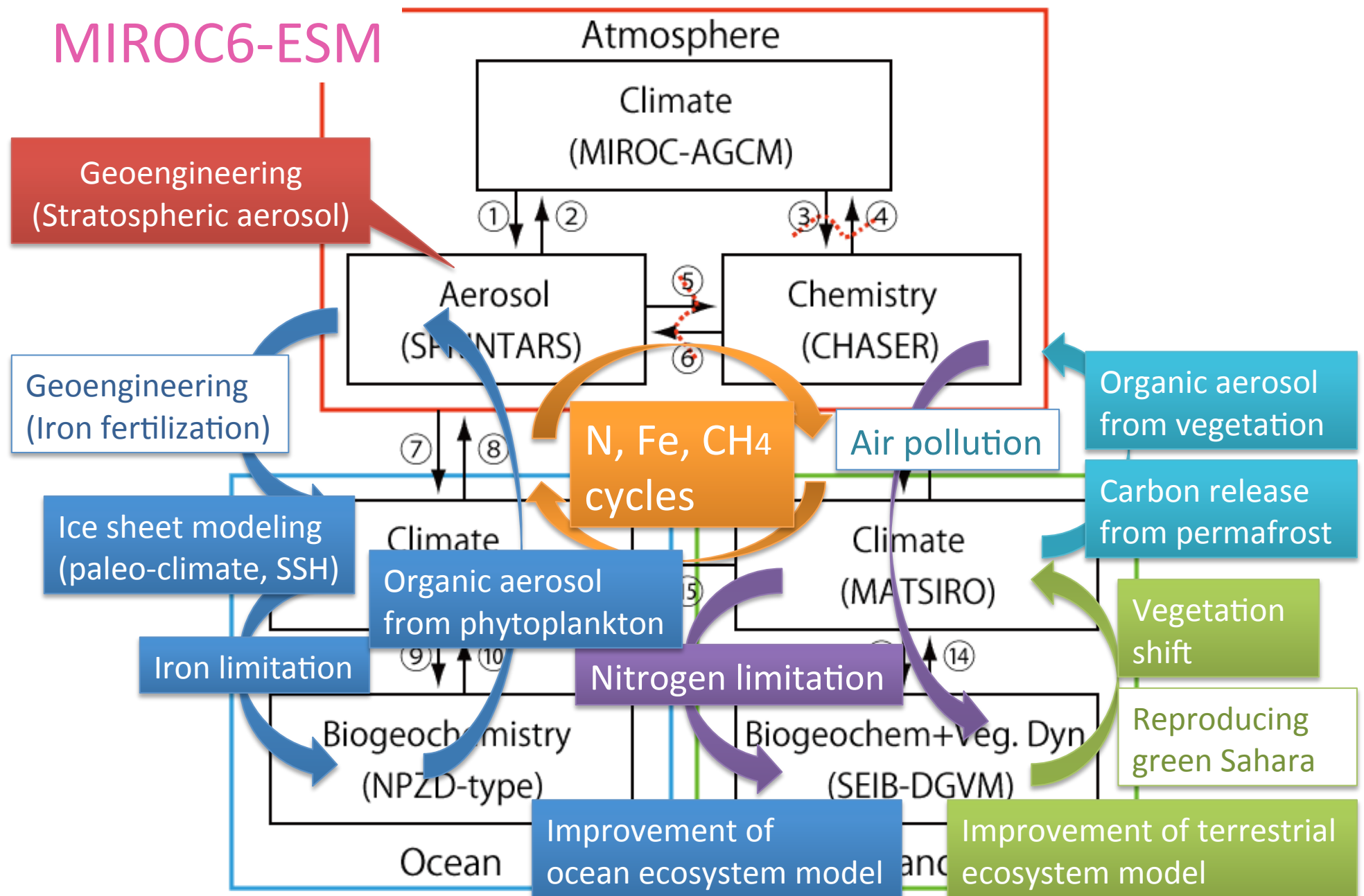


Watanabe et al. (2014 Nature CC)

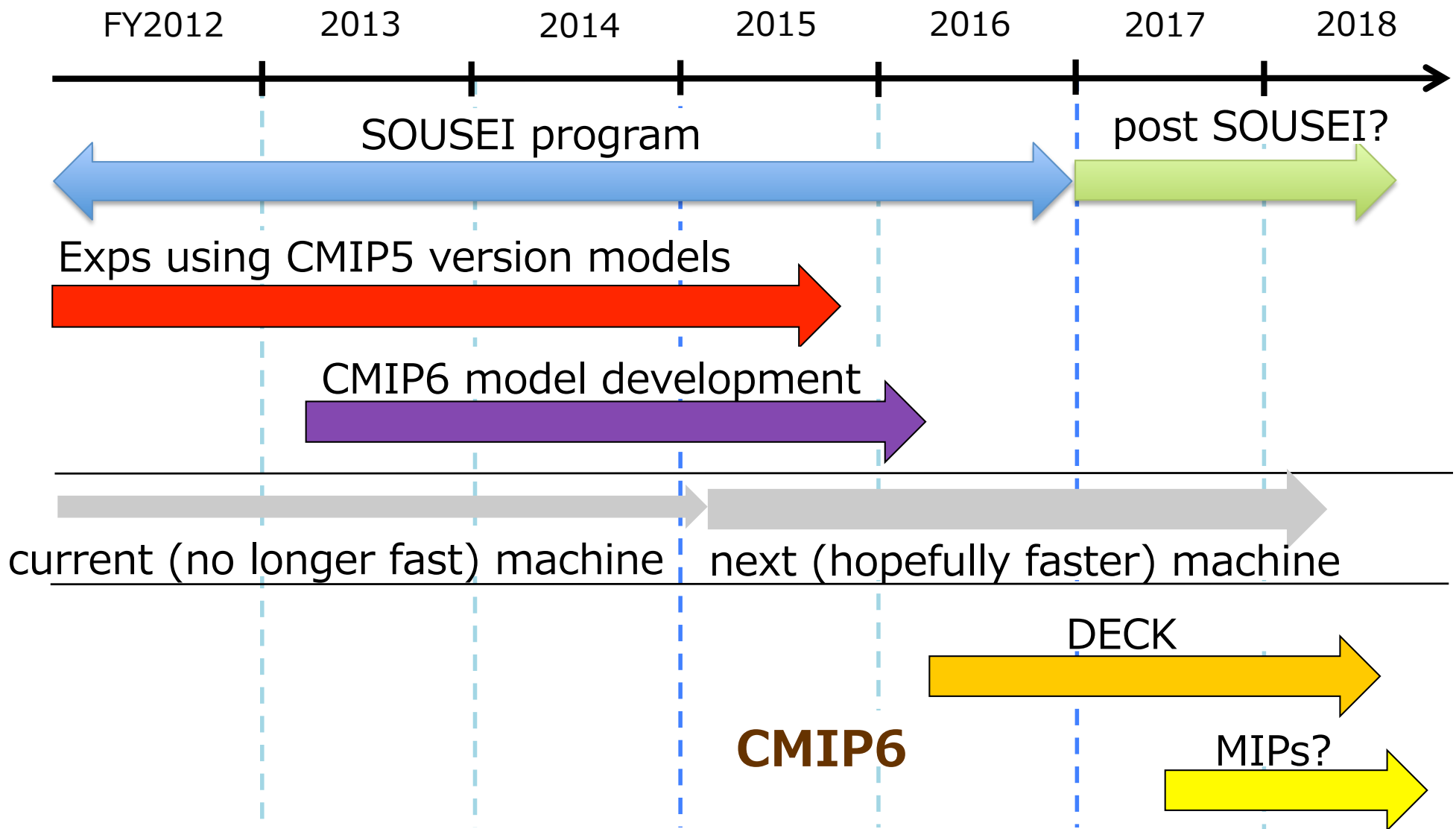
NICAM simulation w/ O(km) mesh



Model update plan & particular interests



Timeline of the MIROC group



** First CMIP6 experiments may be started in early 2016*

Feedbacks, answers to the inquiry

- Feedback on each of the CMIP DECK simulations, keeping the criteria of the DECK in mind
- **Further prioritization beyond the DECK**
 - **(a) no further prioritization beyond the DECK**
 - **What is more desirable is to harmonize experiments across MIPs so that model groups do not have to run too many similar-but-slightly-different experiments.**
 - **A well-designed table of the entire endorsed MIP experiments, which clearly shows experiment overlaps among different MIPs (eg in a matrix).**
- Feedback on MIP proposals and your group's relative scientific interest in the different MIPs proposals (please also fill attached xls-spreadsheet)
- Approximate nb of years of experiments to be run for CMIP6 and infrastructure issues
- Other issues related to CMIP6?

Feedbacks, answers to the inquiry

- Feedback on each of the CMIP DECK simulations, keeping the criteria of the DECK in mind
 - DECK is well-planned. I would prefer DECK to include only one scenario run which is SSP5-8.5, common with ScenarioMIP's Tier 1 category.
- Further prioritization beyond the DECK
 - (a) no further prioritization beyond the DECK
 - What is more desirable is to organize experiments across MIPs so modellers do not have to run too many similar-but-slightly-different experiments.
 - A well-designed table of the entire endorsed MIP experiments, which clearly shows experiment overlaps among different MIPs.
- Feedback on MIP proposals and your group's relative scientific interest in the different MIPs proposals (please also fill attached xls-spreadsheet)
 - ScenarioMIP occupies a more-or-less special position among proposed MIPs, in that it provides forcing data to other MIPs. Some coordination, may be led by ScenarioMIP, should be established among MIPs in order to avoid confusions regarding which scenario has a higher/lower priority.
- Approximate nb of years of experiments to be run for CMIP6 and infrastructure issues
 - 500 years with T213
 - 10,000 years with T85
 - 30,000 years with T42
- Other issues related to CMIP6?
 - Metadata for DECK should be finalized while scenario runs are still under discussion.