

Breakout group report

Modelling

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“Constraints”

- Only 90 minutes for discussion
 - Focus on
 - Breakthroughs
 - Going beyond previous workshops
- ➔ **Coordinated modelling experiments**

List of “issues”

- Coordinated experimentation
- Nonlinearity
- Sampling
- Role of the background flow
- Low-latitude vs Arctic influences
- Role of coupling
- Role of the stratosphere
- Prescribing fluxes rather than SST-SIC (AMIP)
- ...

Coordinated experimentation

- We need a set of “fast track” experiments (Tier-1)
- Additional experiments (Tier-2–3) will follow later
- Considerations for the protocol
 - Should be straightforward to implement
 - Exploit existing efforts (e.g. CMIP6 MIPs)
 - Flexibility to address as many of the “issues” as possible within one protocol

Fast Track #1

- Use CMIP6 AMIP as control (1979–today)
- Carry out sensitivity experiments
 - Using climatological sea ice
 - Using climatological SSTs

Pro:

- Extremely straightforward
- Control comes for free
- Targets impact of recent AA (attribution)

Con:

- Limited in addressing variety of existing issues

Fast Track #2

- AMIP-type control with clim. SST/sea ice
- Three time slices
 - Past (pattern from pre-industrial runs)
 - Present (pattern from transient runs)
 - Future (pattern reflecting +2°C conditions)

Pro:

- Setup well suited to address a large number of issues
- Targets recent and future change

“Con”:

- Relatively idealized

What shall we do?

- *Decision* difficult to be made here → but *recommendation* would be good
- Explore *three options* with the community in the coming months:
 - Option #1 = Fast Track #1
 - Option #2 = Fast Track #2
 - Option #3 = Split the community with some addressing #1, some #2 and some even both

Next steps

- Keep up the momentum!
- Establish a *task team* which will move things forward (Doug Smith, Yannick Peings, James Screen...)
- Identify interested modelling groups (sign up here or contact Doug et al.)
- Community feedback is critical!
- Final protocol in June 2017
- Testing could start now...

Task Team

- Small-*ish* number of participants ($\ll 10$)
- Joint international effort (Arctic-midlatitudes linkages MIP)
 - EU-projects (APPLICATE, Blue Action, PRIMAVERA)
 - US-CLIVAR Working Group
 - Belmont projects
 - ...

Other important topics

- Sharing of existing data sets
 - Idea quite well received
 - No time to discuss this further
 - Who is taking the lead?
- Linkages from prediction perspective
- ...