

FESD virtual meeting. Friday February 24th, 2017

Representatives from all groups were present.

There were

- two science presentations
- groups were reminded to get their input for our large computer application to us by March 1st (see below)
- we decided to postpone our summer FESD meeting until later in the year
- we did not have time to discuss John Marshall's proposed review paper (abstract below).

(i) Science presentations

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Gabriel Chiodo: The impact of stratospheric ozone chemistry on climate sensitivity (pdf attached)

Marika Holland: O3 loss influences on regional sea ice trends (pdf attached)

(ii) Discussion of computer application (see email from Doug, details posted here)

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Please think about your needs and get the information to us asap and before 1 March.

The FESD allocation (originally 11.3M core-hrs) is now less the 500K core-hrs. The next call for proposals is due on 20 March (see NCAR CISL call below). John and I will submit a new proposal for the group, but we need input.

Please send us the following:

1) A brief (~1 paragraph description) of the science your experiment will address.

2) Experiment details (see attached proposal for examples):

=> Experiment name (e.g., Single Forcing GHG and ODS).

=> Type (SF Fixed ODS only; SF Fixed GHG only).

=> Model configuration details (the model, version, resolution, other details).

=> Simulation period (e.g., 1950-2100)

=> Number of simulation years per realization (e.g., 150 years)

=> Number of members (e.g., 3x).

(we will figure out the total core-hrs needed per experiment/type).

=> HPSS storage needs (Tb) - long term archive.

=> Project space needs (Tb) - local disk space for analysis.

Please send us this information by 1 March 2017.

If you have any questions, please don't hesitate to ask.

Thanks,

Doug (and John).

(iii) Abstract of proposed review paper (abstract below)

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Proposed title and abstract of review paper (for Nature Geosciences)

What's happening around Antarctica?

or (boring title)

Decadal strengthening of Southern Ocean surface westerlies: causes and climate implications

Westerly winds blowing around Antarctica have exhibited a remarkable upward trend beginning in the 1980s, a consequence of natural variability, ozone depletion and greenhouse gas forcing. During this time sea-surface

temperatures have cooled and sea-ice extent expanded with profound implications for upwelling and ocean ventilation rates and trends in air-sea carbon fluxes. Here we discuss the causal links underlying these trends what we understand about how the Southern Ocean and surface climate responds to surface wind trends. A major recent advance is the realization that the SO adjustment to wind perturbations stretches over decades, as the fast Ekman dynamics of the upper ocean trigger slow upwelling from the ocean interior with delayed feedbacks on the surface climate. The similarity in the timescales of the observed wind trends and that of the ocean's adjustment has profound implications on our interpretation of SO climate indices. We use Climate Response Functions (CRFs) - the response of the climate to step changes in forcing - to help rationalize the processes at work and provide an organizing framework from which to interpret past trends and to speculate about future changes as the ozone hole heals but GHGs continue to rise. Our discussion will highlight the strengths and weaknesses of the current generation of climate models for detection/attribution studies of trends in SO climate indices and how we might proceed observationally to reduce uncertainties.