# Joint OMWG / LIWG / PCWG / BGCWG Meeting on MOM6
# 2 March 2017
# Center Green Auditorium (South Bay)
# National Center for Atmospheric Research – Boulder, Colorado

***Webcast*: *https://ucarconnect.ucar.edu/live?room=cg12126***

Purpose: To receive input from the CESM Working Groups that are impacted by the switch to the Modular Ocean Model version 6 (MOM6) as the new CESM ocean component regarding their concerns, suggestions, etc.

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| 8:00 | *Coffee* | |
| 8:30 | Background | |
| 8:40 | Introduction to MOM6 | Alistair Adcroft |
| 9:00 | Current state of land-ice modeling in ACME and how it relates to CESM | Jeremy Fyke |
| 9:20 | Discussion | |
| 10:00 | *Continental Breakfast* | |
| 10:30 | Discussion | |
| 12:00 | *Adjourn* | |

***Discussion Topics / Questions Received:***

PCWG:

- How MOM6 differs from POP with emphasis on component coupling; what is needed or desired from other model components to work well with MOM6; conversely, what can be modified in MOM6 to work well with others; and time lines for development.

LIWG (in priority order):

1. Support for ocean circulation beneath static ice shelves in global simulations with a general vertical coordinate.
2. How to parameterize the delivery of heat to ice shelves in non-eddy-resolving global simulations.
3. Support for a dynamic ocean upper boundary condition as ice sheets advance and retreat.
4. Implementing a dynamic land / ocean mask to support calving front advance and retreat.
5. Support for dynamic sea level (global and/or regional) due to changing ocean mass.

Specifically, for simulation of static ice shelves, we have these questions:

- Can MOM6 model ocean circulation beneath static ice shelves? Can it support a general vertical coordinate near a calving front where layer interfaces are steep?
- Given the large-scale ocean circulation computed by MOM6 at ~1° resolution, can we somehow parameterize the delivery of heat to the edge of ice shelves, for purposes of computing melt rates (e.g., by driving a plume model coupled to CISM)? If not, then we'll be limited by the cost of high-resolution (~1°) ocean simulations.

For dynamic ice shelves, some questions would be:

- Can the ocean handle a changing upper boundary condition as grounding lines and calving fronts advance and retreat?
- Can CESM handle an advancing / retreating calving front through a dynamic land / ocean mask? As the calving front advances, the land model needs to generate an SMB as the calving front retreats, the coupler needs to supply fluxes directly to the ocean (or sea ice) rather than the land.