Quarterly Roadmap (April-June 2019) [DRAFT]

v1 Simulation campaign

<table>
<thead>
<tr>
<th>Simulation</th>
<th>Duration</th>
<th>Resolution</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>1950-2050 (all forcings)</td>
<td>100 years</td>
<td>LR</td>
<td>Extend existing historical simulations; multiple ensemble</td>
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<tr>
<td>1950-2050 (GHG-only)</td>
<td>100 years</td>
<td>LR</td>
<td>Multiple ensembles</td>
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<tr>
<td>1950 control</td>
<td>100 years</td>
<td>HR</td>
<td></td>
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<td>100 years</td>
<td>HR</td>
<td></td>
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<tr>
<td>AMIP (2000-2010)</td>
<td>10 years</td>
<td>1/8 deg global</td>
<td></td>
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<td>10 years</td>
<td>1/8 deg RRM</td>
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Notes:
- Would like to complete v1 LR campaign on Edison, but Edison will be decommissioned on 13 May 2019.
- Low-res and high-res future compsets are not yet available and significantly behind schedule.
- HR simulations may start this quarter, but won't be complete.
- Need input from EC and Wuyin Lin whether the 1/8 deg atmosphere-only simulations are still needed.

v1 Analysis

Manuscripts

Submitted manuscripts (or expected to be submitted before quarter starts)

- E3SMv1 low-res overview ([Chris Golaz](#))
- Analysis of barrier layers in E3SM ([Jack Reeves Eyre](#))
- Dust life cycle analysis ([Yan Feng](#))
- Monsoon analysis ([Bryce Harrop](#))
- EAMv1 RRM CONUS ([Qi Tang](#))
- Evaluation of EAMv1 using COSP ([Yuying Zhang](#))
- Alternate triggers for ZM ([Shaocheng Xie](#), collaboration with CMDV-RRM)
- CONUS RRM precipitation ([Xue Zheng](#), collaboration with CMDV-RRM)
- ...

New manuscripts

Note: this list is being worked on and may not be complete until after the all-hands meeting.

- E3SMv1 high-res overview ([Peter Caldwell](#))
- Mixed layer heat budget analysis ([LeAnn Conlon](#))
- Evaluating sea ice thickness in Earth System Models using altimetric emulators ([Andrew Roberts](#))
- Surface heat flux analysis in Labrador Sea ([Qing Li](#))
- AMOC variability in E3SM ([Luke Van Roekel](#))
- SST variability ([Luke Van Roekel](#) and [Milena Veneziani](#))
- Antarctic Slope Front analysis ([Milena Veneziani](#))
- Snow trend analysis ([Tian Zhou](#))
- ...

v2 Model developments
Grids

- Finalize new atmosphere North America grid (Erika Roesler, collaboration with CMDV-RRM)
- Finalize and test new ocean grid with coastal refinement
- Integrate new grids

Atmosphere

- Semi-Lagrangian transport + QLT for conservation/monotonicity (Oksana Guba, Mark Taylor)
- NH dynamical core (Mark Taylor, Oksana Guba)
- Evaluation of alternate physics for consideration in v2
- Minimalist “scale-aware” physics package for RRM (collaboration with CMDV-RRM, Xue Zheng)
- Evaluate new version of CLUBB as a possible replacement for the current version (Balwinder Singh, Vince Larson)
- ZM with ULL (unrestricted launch level; collaboration with CMDV-RRM, Shaocheng Xie et al)
- Retuning of gravity wave drag for improved MJO (collaboration with NGD-Atmosphere, Jadwiga (Yaga) Richter et al)
- Improved dust aerosol physics (Yan Feng)
- ...  

Ocean

- KPP physics improvements (Langmuir mixing) – PR issues (Qing Li)
- Test and implement KPP implementation port to GPU (Luke Van Roekel)
- Test and Evaluate Scale-aware Gent-McWilliams mesoscale eddy parameterization (Milena Veneziani)
- Monitor progress of Redi mixing implementation through University Project (Gnanadesikan) (Mathew Maltrud)

Land

- Water management model and MOSART inundation (Tian Zhou)
- Plant hydraulics (Yilin Fang)

Coupled

- Energy and water conservation
- Tuning and testing

Diagnostics

- E3SM Diags improvements (Chengzhu Zhang)
- Develop and implement Water Cycle metrics