

# Quarterly Roadmap (April-June 2019) [DRAFT]

## v1 Simulation campaign

Simulation	Duration	Resolution	Notes
1950-2050 (all forcings)	100 years	LR	Extend existing historical simulations; multiple ensemble
1950-2050 (GHG-only)	100 years	LR	Multiple ensembles
1950 control	100 years	HR	
1950-2050 (all forcing)	100 years	HR	
AMIP (2000-2010)	10 years	1/8 deg global	
AMIP (2000-2010)	10 years	1/8 deg RRM	

### 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-Atmsophere, [Jadwiga \(Yaga\) Richter](#) et al)
- Improved dust aerosol physics ( [Yan Feng](#) )
- Alternate surface flux formulation based on Fairall et al (2003) ( [Kai Zhang](#) )
- ...

## 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