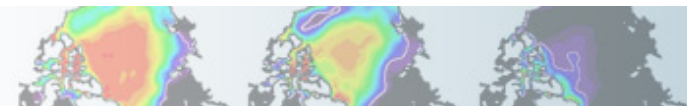# WACCM & CHEM WG's Discussion

Gettelman, Mills

Emmons, Tilmes

Items to Discuss

- WACCM Summary

- CHEM Summary

- Goals for CESM2

  - Joint Simulations & Chemistry

- CMIP6

- Statements to AMWG & SSC….

WACCM6 Current Plans/Progress

- Updated Chemistry (From CCMI)
- Prognostic Stratospheric Aerosols
- Updated Gravity Wave Schemes
- Inertial Gravity Waves
- Internally Generated QBO
- WACCM-X Ionospheric Electrodynamics
- Parallel Physics to CAM6
- Higher resolution comp sets (L110 v. L70)

CHEM Summary

- Improve chemistry representation:
  - Implementation of FAST-J photolysis scheme, with CLOUD-J, accounting for impact of aerosols on photolysis
  - Evaluation of simple chemistry used in CAM5-MAM
  - Improvements to secondary organic aerosol (SOA) formation
  - Addition of nitrate aerosol
- Test CSLAM in Spectral Element dynamical core with chemistry
- Test couplings of land, biogeochemistry and atmospheric chemistry
  - Including methane, biogenic VOCs, fire emissions
- Test chemical representation in CAM5.5 at 1-degree

Timeline for CESM2
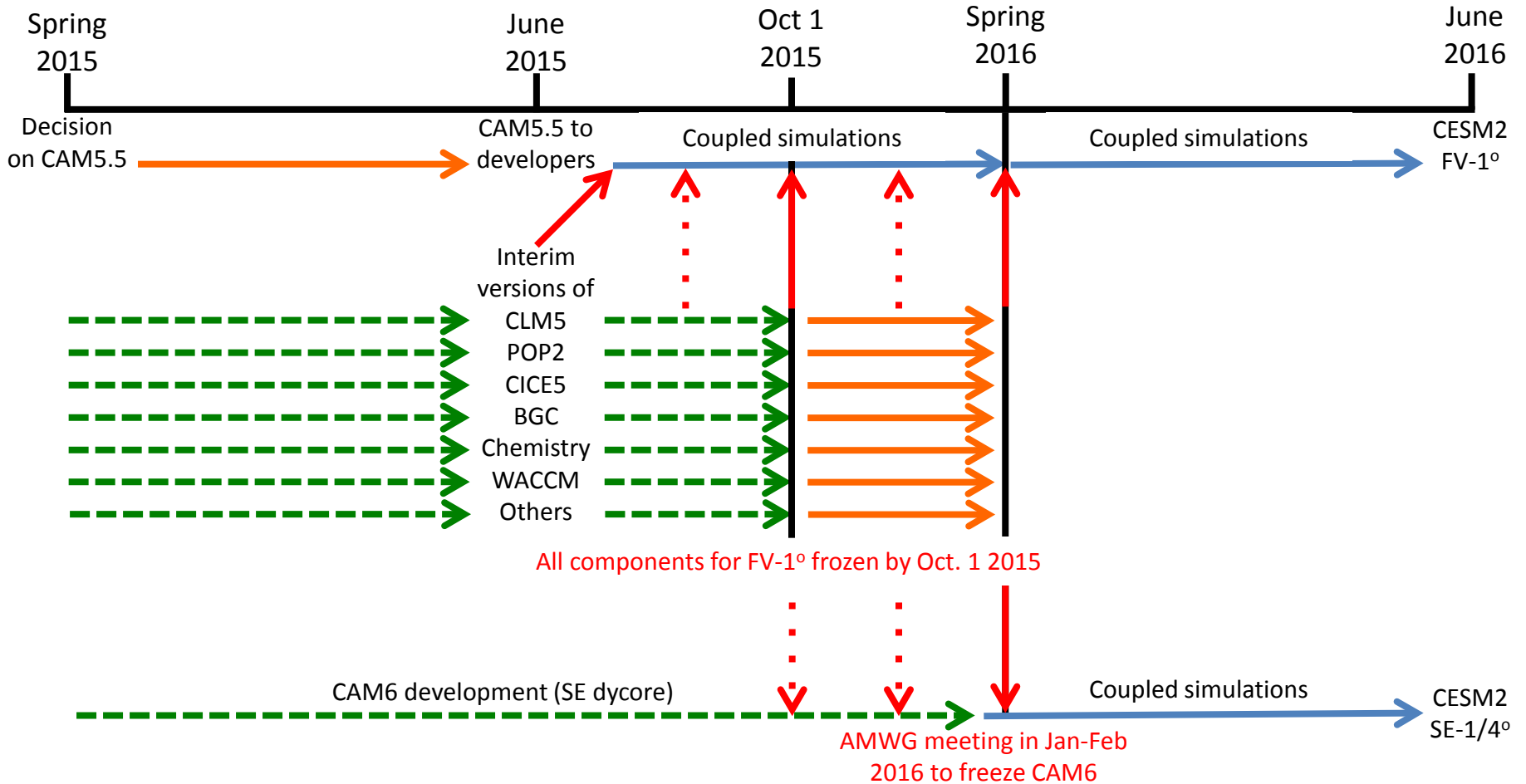
Goals for CESM2

- Joint Chemistry
  - TSMLT (Trop-Strat-Meso-Lower Thermo)
  - Is all that okay?
- CSLAM
  - Still possible, might not want to count on it
- Joint Simulations
  - Chemistry simulations for CMIP6: Do with WACCM6+TSMLT chemistry

CMIP6

CESM CMIP6 Web Page:

    – http://www.cesm.ucar.edu/models/cmip6.html

Current Point People

- AerChemMIP: Lamarque, Emmons, Gettelman
- GeoMIP: Tilmes/Mills
- VolMIP: Mills/Otto-Bilsner
- SolMIP: Marsh
- DynVar: Marsh

Joint Items for Communication

- CSLAM: yes please
  - Priority. Will save computer time if it works.
- Unified chemistry
  - We think this is working well?
- Others?