S2S Hindcasts with CESM2

• Would like to see this as a community project
• Will provide ‘baseline’ simulations; Additional simulations can then be carried out later
• Use default CESM2
• Weekly Monday starts from 1999 to 2019
• 11 ensemble members
• Atmos IC: CFSv2
• Land IC: CFSv2 forced land
• Ocean/Sea-ice IC: JRA-55 forced ocean
S2S Hindcasts with CESM2

• Already have community interest in looking at MJO and TCs.

• If you would like to have an early look/help analyze set, email jrichter@ucar.edu

• Output: quite comprehensive, BUT…. to make sure what you would like to look at is included, email jrichter@ucar.edu by COB on June 22.
New Multi-year Hindcasts with CESM2

- CISL NSC (NCAR Strategic Capability) compute proposal submitted by CGD-ESP group (Spring 2020): “Multiyear Earth System Prediction using CESM2”

- CESM2 at nominal 1° resolution (CAM6, POP2, CLM5, CICE5)
  - With prognostic ocean BGC

- 20-member hindcasts initialized 4x/year (Nov, Feb, May, Aug) over 1970-2019
  - Simulation length = 3 years

- ATM ic: JRA-55 reanalysis
- OCN ic: JRA-55-do-forced POP2 simulation (CMIP6-OMIP2)
- ICE ic: JRA-55-do-forced POP2 simulation (CMIP6-OMIP2)
- LND ic: JRA-55-forced spinup of CLM5 (?)
New Multi-year Hindcasts with CESM2

• Total request: 12,000 sim-years, 42M core-hours
• Award: 18M core-hours
• Next steps (Summer/Fall 2020):
  – Construct LND ic’s
  – Decide on optimal trade-off (start dates vs. ensemble size) given <50% of requested allocation (and/or identify other compute resources, including expected future ESPWG allocation or community contributions)
  – Begin simulations
• Will be considered an ESPWG Experiment
• Will follow CESM guidelines (http://www.cesm.ucar.edu/management/docs/data.mgt.plan.2011.pdf) regarding data dissemination (PIs: Yeager, Richter, Pegion)

• After evaluation, consider extensions of MY hindcasts into a seamless set of BGC-enabled CESM2 seasonal-to-decadal hindcasts
Questions:

- ESPWG will get a computer time allocation from Nov 2020 - October 21, 2022
- To get the allocation, we need to propose simulations.
- What simulations would you like to see?