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NASA's Global Modeling and Assimilation Office (GMAO) has developed a new system (GEOS-S2S-3) for sub/seasonal prediction
that includes the coupled model, the ensemble forecast strategy, and the one-way weakly coupled assimilation system to be used
to initialize the forecasts. The development of the coupled model for use in sub/seasonal forecasts included two substantially
different approaches targeted at a priori reduction of the AOGCM systematic error. The first approach is an objective model
parameter tuning using a Green's Functions methodology,
and despite starting off with a reference simulation that was hand-tuned, further reduced the model error by an additional 12%-
15%. The second approach makes use of the "analysis increments" for the atmosphere (and will be extended to include the ocean)
to compute "Tendency Bias Correction" (TBC) terms as an approximation of the model systematic error. Addition of the TBC
correction terms a priori resulted in a sustantial reduction of model systematic error but had little to no impact on either
subseasonal or seasonal forecast skill. This approach has not been implemented in GEOS-S2S-3 but further development is
under way.
Presentation file
Molod-Andrea.pdf
Meeting homepage
S2S Community Workshop
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