Update on IRI Seasonal Forecasting Activities for WGSIP
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The International Research Institute for Climate and Society (IRI) has introduced a family of real-time coupled seasonal forecast models. These models all utilize the Max-Planck Institute for Meteorology (MPI-M) ECHAM4.5 atmospheric general circulation model (AGCM) coupled to various ocean models. One of the coupled models employs direct coupling to the Geophysical Fluid Dynamics Laboratory (GFDL) Modular Ocean Model Version 3 (MOM3). The second also utilizes the MOM3 but employs anomaly coupling. Both of these models are initialized using an older version of the GFDL ocean data assimilation (ODA) system which assimilates temperature only. The final coupled model utilizes a thermodynamic ocean model with sea surface temperature (SST) forecasts in the central and eastern Pacific prescribed from the National Centers for Environmental Prediction (NCEP) Coupled Forecast System (CFS). Each of the forecast systems has 12 ensemble members and retrospective forecasts are available from 1982 to present. Outputs from the directly coupled model have been contributed to the Climate-system Historical Forecast Project (CHFP). This data is available from the IRI Data Library in a variety of formats including IEEE binary, NetCDF, and OpenDAP. The link to this data is : http://iridl.ldeo.columbia.edu/SOURCES/.WCRP/.CHFP/.IRI/.ECHAM4p5-MOM3-DC2/ . The other data sets could be made available to CHFP if there is interest and once we are sure that our data format is CHFP-compliant.

The IRI has established an experimental real-time coupled multi-model ensemble forecast system. The input models to this system are the coupled models discussed above plus the NCEP CFS. The MME is formed using a simple pooling technique with each model having equal weighting. Probabilistic forecast maps of near-surface air temperature and precipitation are available on the web here:http://portal.iri.columbia.edu/portal/server.pt?open=512&objID=1092&PageID=8101&cached=true&mode=2&userID=2 .

The IRI 2-tier MME forecast system has been improved by inclusion of pattern-based model correction. In the near-future probabilistic forecast information beyond terciles will be available for this forecast product. Research on novel ways to the weight the models in the MME beyond the current Bayesian and Cannonical Variate methods is under way. Forecast verification of the real-time 2-tier MME has been performed over the systems historical record and appears in a recent paper in the *Journal of Applied Meteorology and Climatology*.