CTB Joint SEMINAR Series

Theme: CFS as a Prediction System and Research Tool
Climate Test Bed (CTB)
Center for Ocean-Land-Atmosphere Studies (COLA)

Verification of 25 years of daily CFS forecasts – climatology of day 5 scores, prospects for wk3, wk4, MJO, and days 1-270

Speaker: Huug van den Dool and Suranjana Saha
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Date: Thursday, May 29, 2008
Time: 10:00 a.m.
Place: Room 209, NOAA Science Center (*)

The NCEP Climate Forecast System (CFS), consisting of coupled global atmosphere-ocean-land components, was developed and tested with the express purpose of support for seasonal prediction for the United States (Saha et al 2006). The CFS was implemented as an operational tool in August 2004. For each initial month during 1981-2003 (now through 2005) a 15 member ensemble had been run out to 9 months. When strung out, this data set of 4500 forecasts amounts to 3375 years of model integration. Eventually daily data of about 30 selected variables have been released in early 2006 – this is the data we study here.

There is obviously a wealth of information about both forecast skill and diagnostic topics in these model data sets. One cannot dream to have this much data about reality. Here we focus on just two forecast aspects. The first is skill of the CFS as if it were an NWP model. Data sets of retrospective forecasts of this sample size have rarely been available to study NWP skill. We comment on day 5 scores, in both hemispheres (Z500) and the tropics (psi and chi200). The second forecast aspect is the precise time scale (or scales) of decay of skill as it tends to approach zero after weeks or months. The skill in seasonal prediction does not stand on its own, it is an amplified version (with improved signal to noise ratio) of skill that has to be there, no matter how minuscule, in the daily forecasts. We also emphasize skill (or lack thereof) in wk3 and wk4.

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