Progress in seasonal predictions at ECMWF

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ECMWF implemented a new seasonal forecasting system (System-4) in November 2011. With respect to the previous System-3, the new system benefits from the use of a latest-generation ocean model (NEMO), a variational data assimilation (NEMOVAR) for the initialization of the ocean state, improved physical parametrizations in the atmospheric model and a more accurate initialization of land surface variables. In addition, the size of both operational and re-forecast ensembles has been increased and the re-forecast period has been extended to 30 years (1981-2010).

In the new system, model biases are generally reduced, with substantial improvements in extratropical regions, and one notable exception in the region of the western tropical Pacific. After a brief review of biases and ENSO-related skill, the presentation focuses on improvements in the predictions for the tropical Atlantic and Africa, showing encouraging progress in the prediction of parameters (eg rainfall) which are crucial to societal applications.