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On the predictability of the equatorial Atlantic

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The tropical Atlantic is characterized by pronounced variability on interannual to decadal time scales that has been shown to affect rainfall over the Sahel region and South America, and to influence El-Niño-Southern Oscillation and global temperature trends. Thus prediction of tropical Atlantic variability is of great importance but current state-of-the-art dynamical prediction systems continue to be matched or even outperformed by persistence and statistical forecasts. This is particularly obvious in the equatorial Atlantic.
While it is often held that the pervasive tropical Atlantic GCM biases are the major stumbling block toward skillful prediction, I will present evidence to the contrary. This evidence, based on observational analysis, multi-model intercomparisons and GCM sensitivity studies, suggests that: 1) GCM biases may not be as detrimental to prediction skill as previously thought; 2) coupled air-sea feedbacks in the equatorial Atlantic are relatively weak; 3) unpredictable noise plays a relatively large role in the equatorial Atlantic region. While these results await further confirmation, they indicate that predictability in the equatorial Atlantic is inherently low, and that bias reduction in the region may not lead to substantial gains in seasonal prediction skill.