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Comparing the Predictability and Skill of Subseasonal Forecasts

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In this talk, I discuss three techniques for comparing forecasts. The first technique is to identify the predictable space at a given time scale using predictable component analysis. Predictable component analysis finds the linear combination of variables that maximizes a measure of predictability. On subseasonal time scales, this space appears to be very low dimensional. I also will address whether there exist forms of subseasonal predictability that cannot be captured by predictable component analysis. The second technique is pair-wise comparison of forecasts, which allows differences in skill to be detected that otherwise could not be detected with conventional methods, such as a difference-in-correlation test or a difference-in-MSE test. Third, I will explain a permutation method that allows a rigorous assessment of statistical significance even when serial correlation exists between forecasts, which is the rule rather than the exception in subseasonal forecasting.

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