

Initialized and Uninitialized ENSO Predictability in Year 2+

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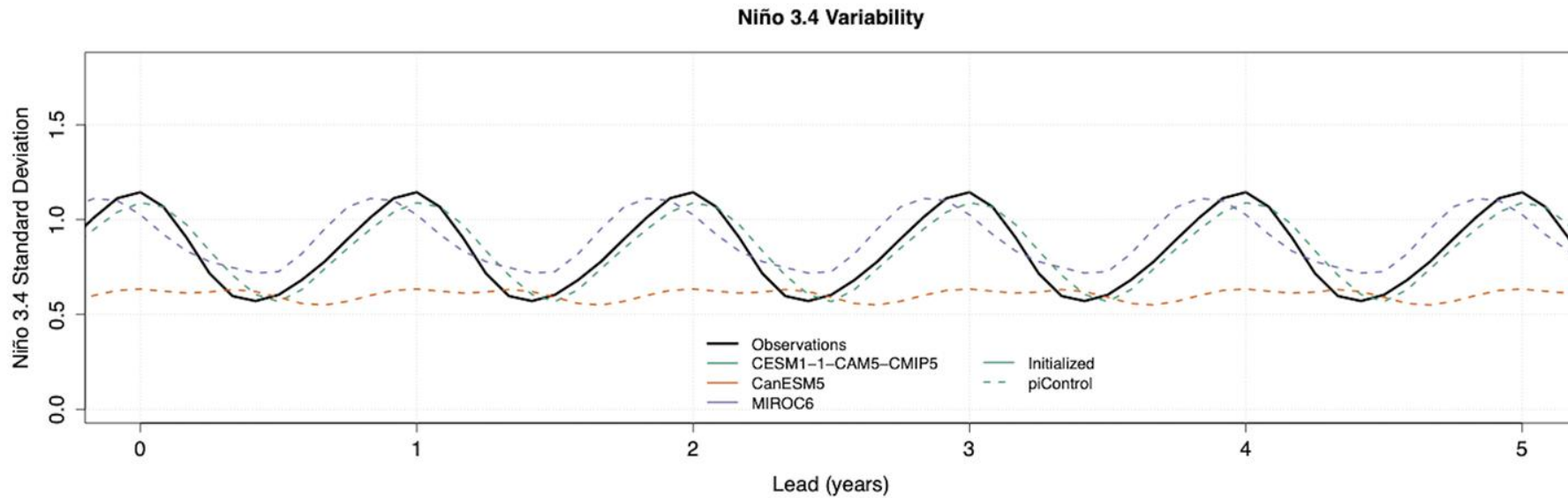
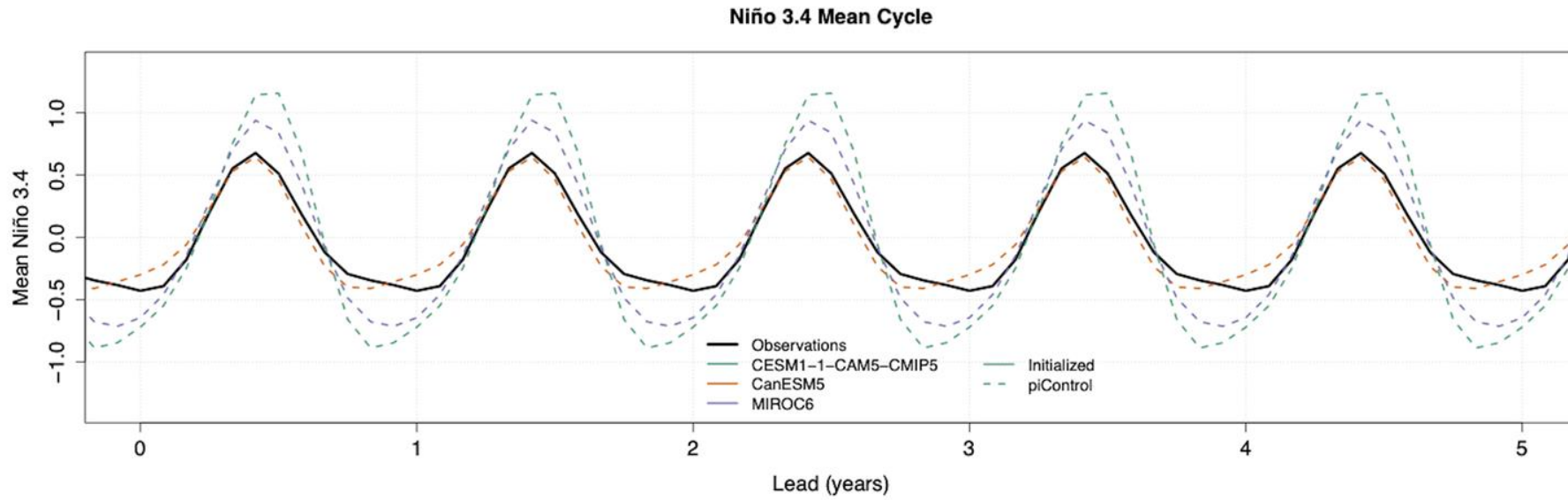
International Research Institute for Climate and Society, Columbia University

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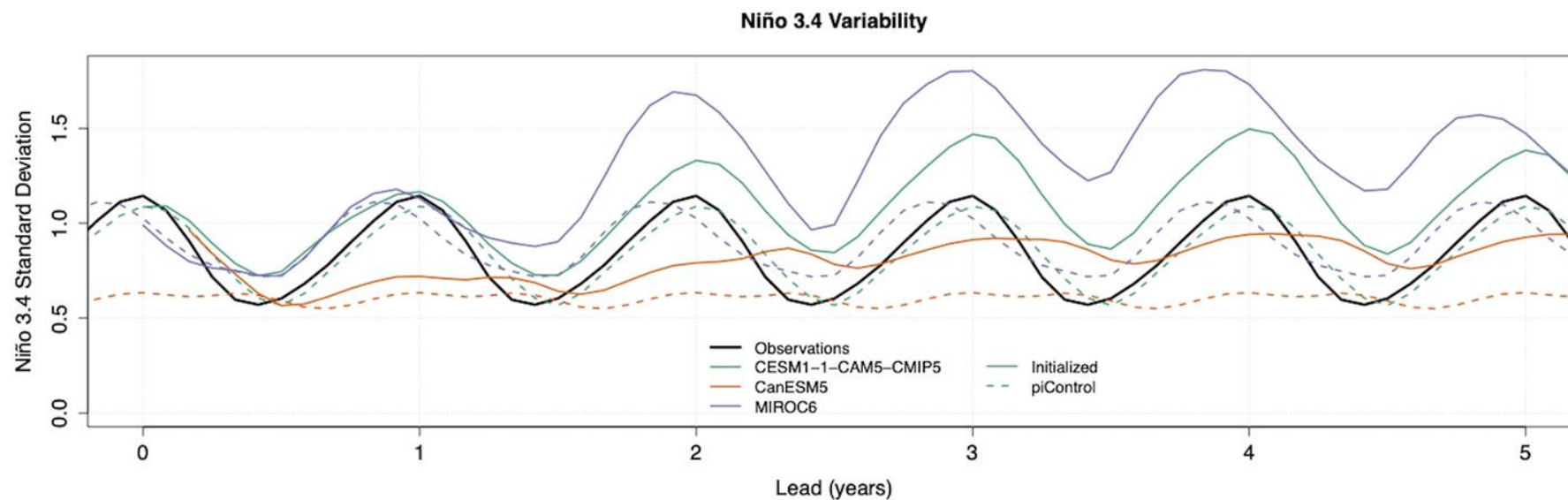
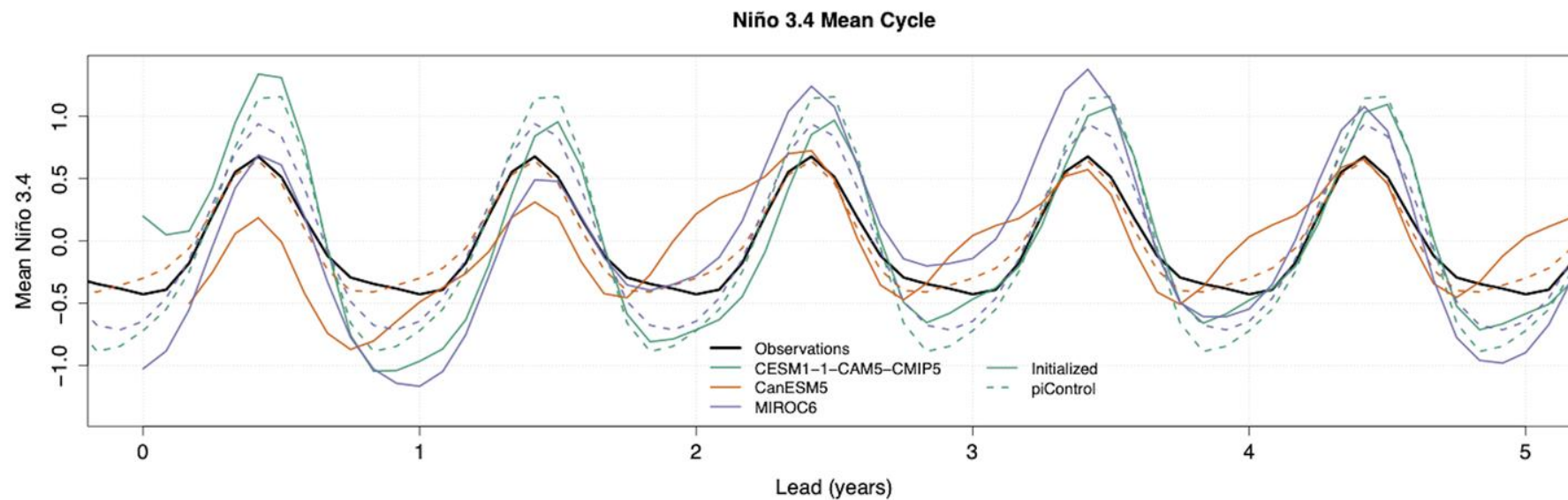
Motivating Questions

- 1) How does initialization affect a model's ENSO climatology?
- 2) Are **initialized models**/**model-analogues** skillful at predicting DJF Niño 3.4 at leads greater than 12 months?
- 3) Does skillful initialized prediction imply skillful model-analogue prediction?

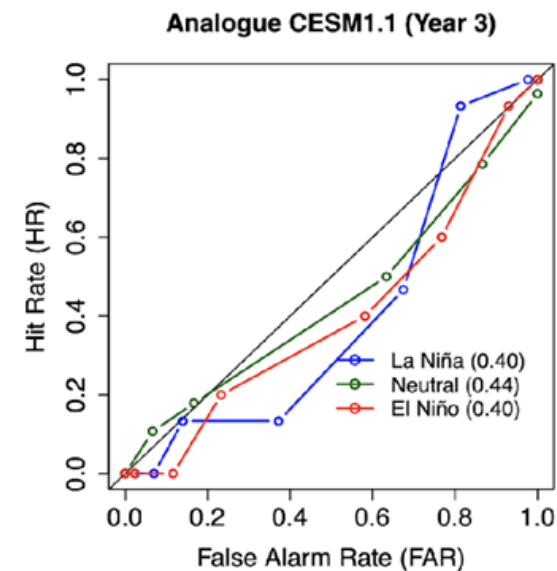
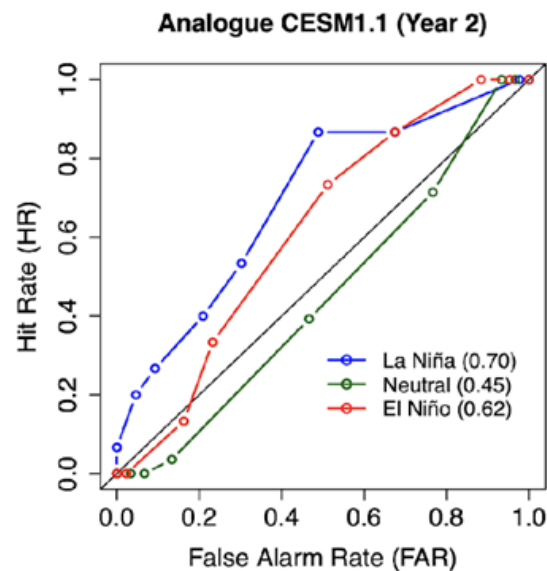
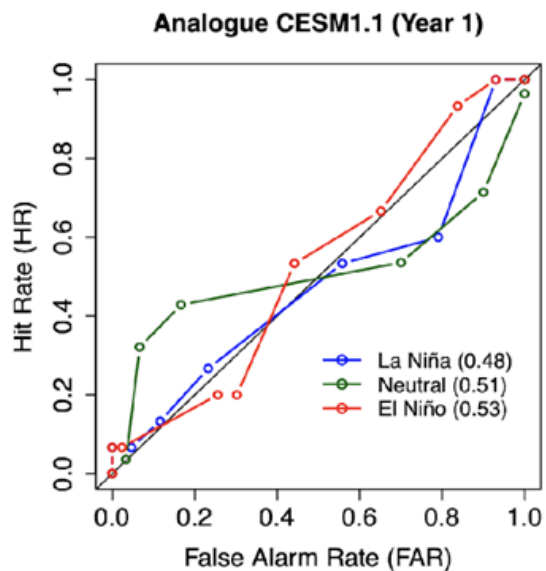
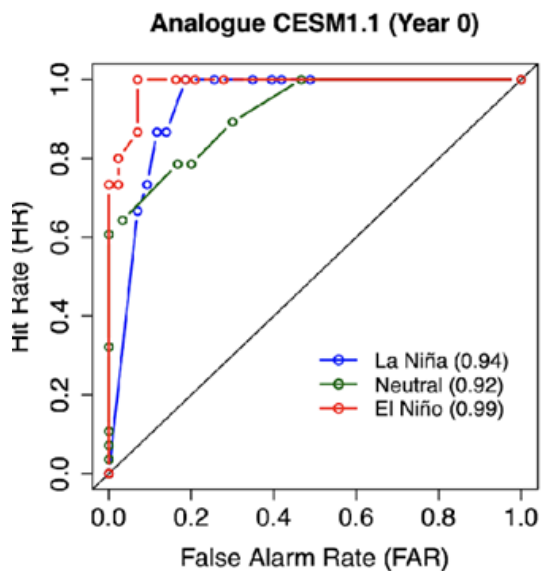
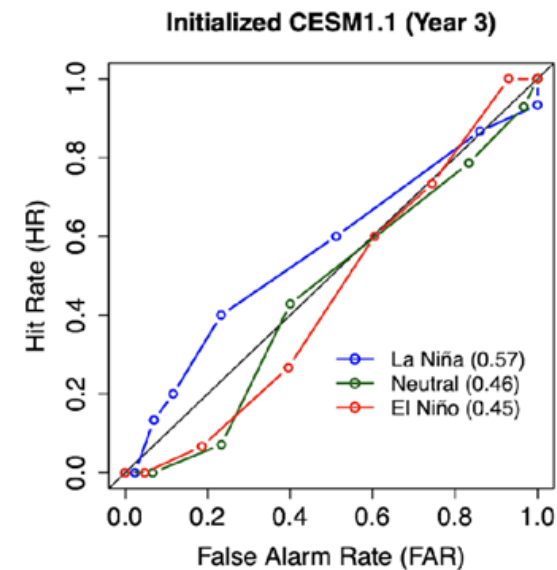
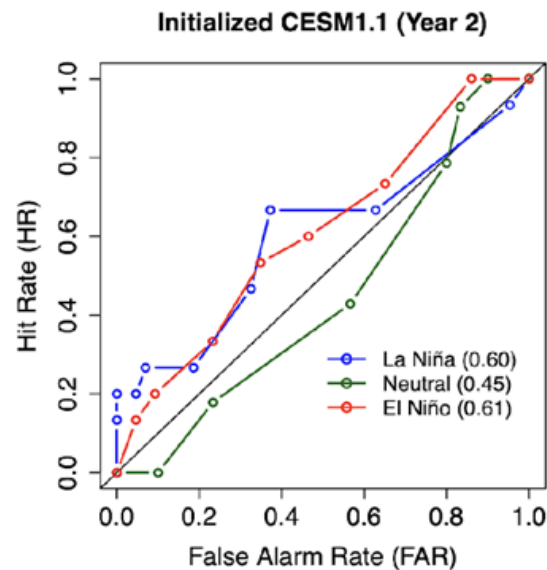
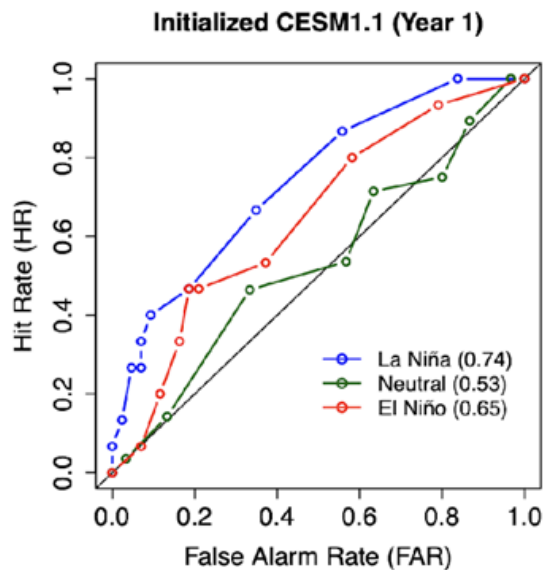
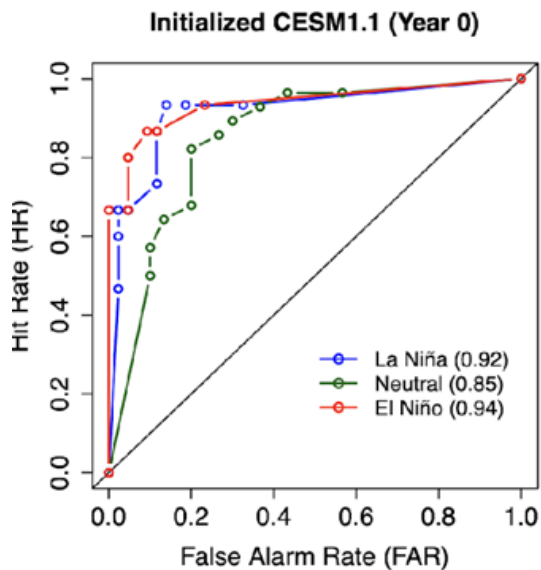
How well do piControl runs simulate ENSO?



How does initialization impact ENSO climatology?

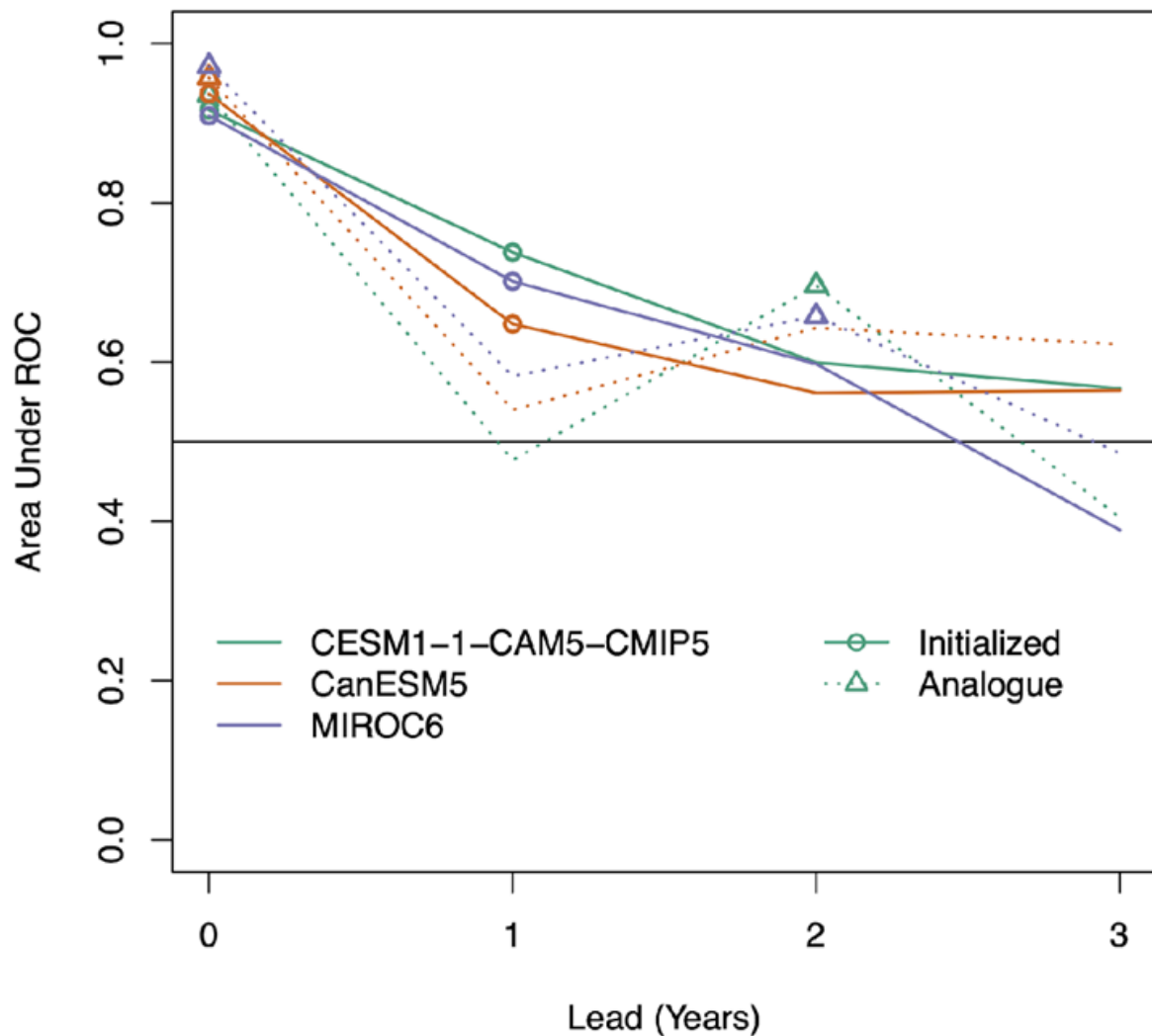


Does initialization improve JFM Nino3.4 prediction?

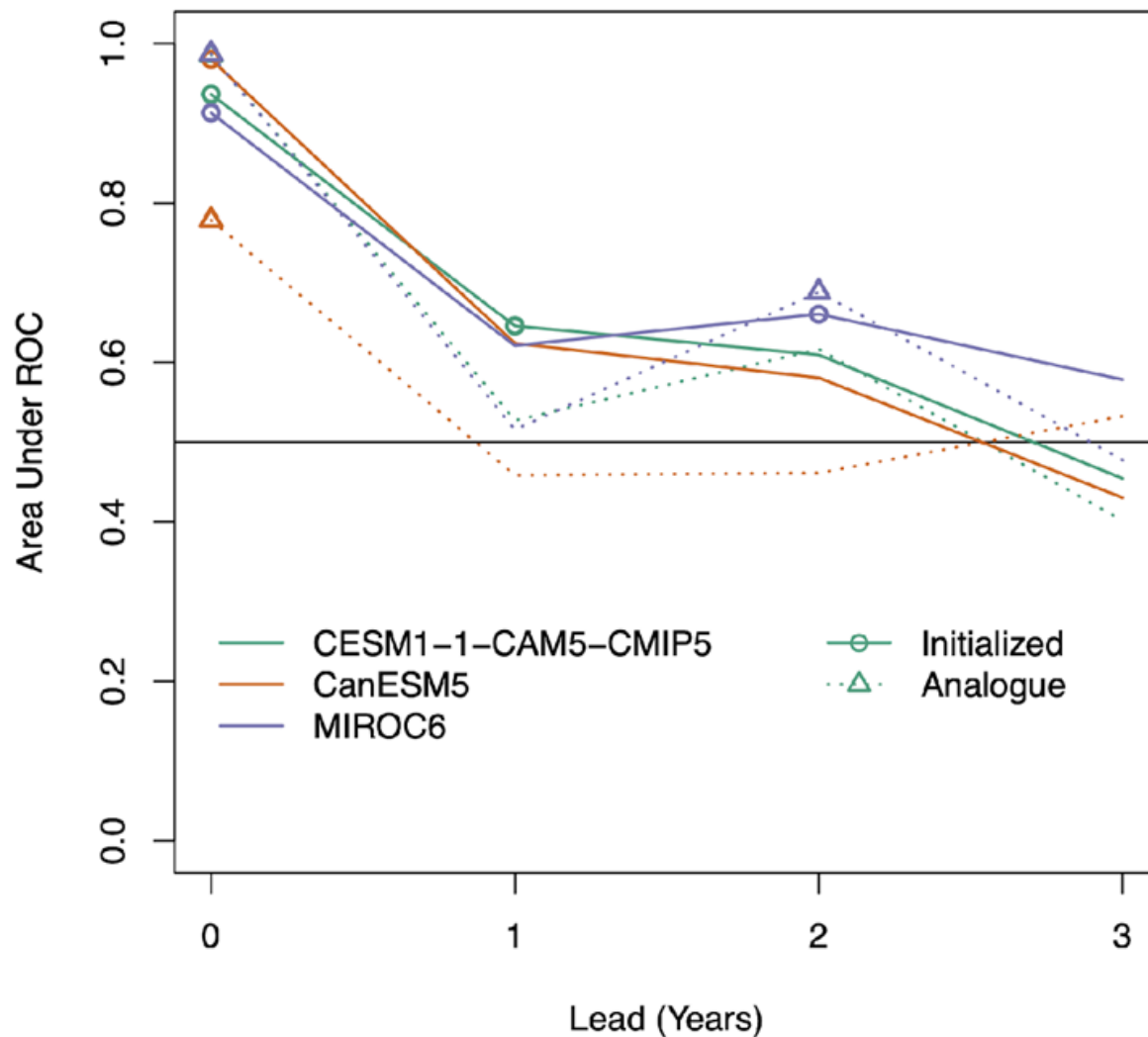


Does initialization improve JFM Nino3.4 prediction?

La Niña Area Under ROC



El Niño Area Under ROC



Conclusions and Future Work

- 1) Some skill found at 1+ year lead times, particularly in La Niña prediction
 - 2) No immediate connection between model ENSO climatology and predictability
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- Q1) Can we use these results to determine long-lead forecasts of opportunity?
 - Q2) Why does analogue-model skill drop off sharply at Lead 1, but return at Lead 2?