

1. Science Question

How does decadal climate variability change the nature and predictability of atmospheric rivers over the Western U.S.?

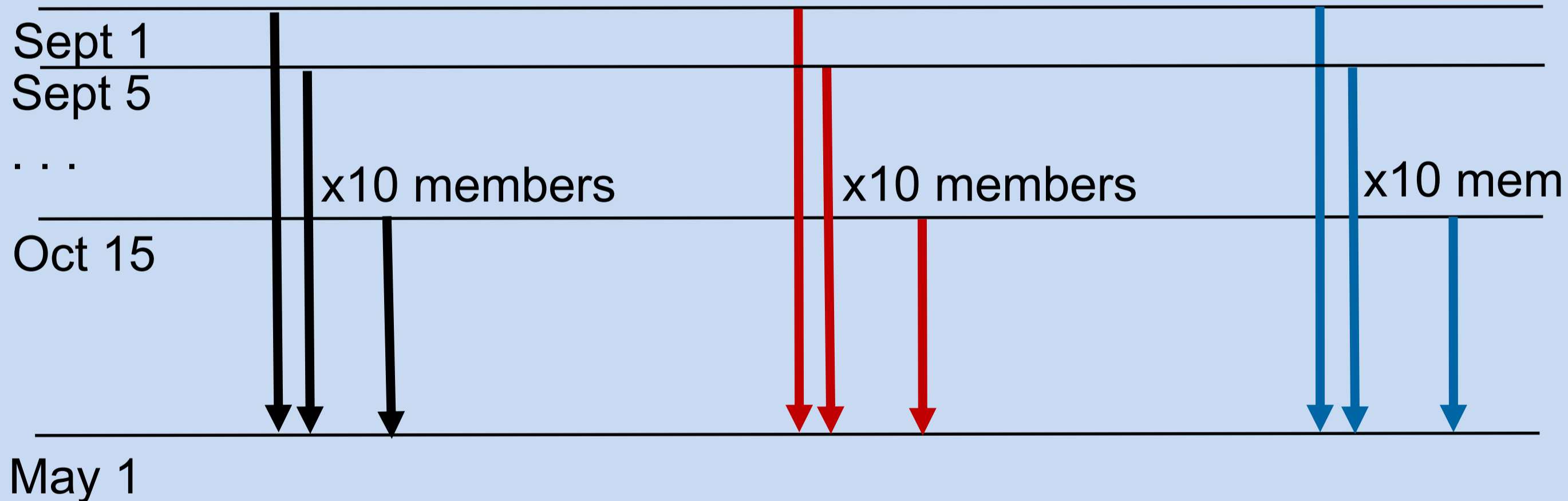
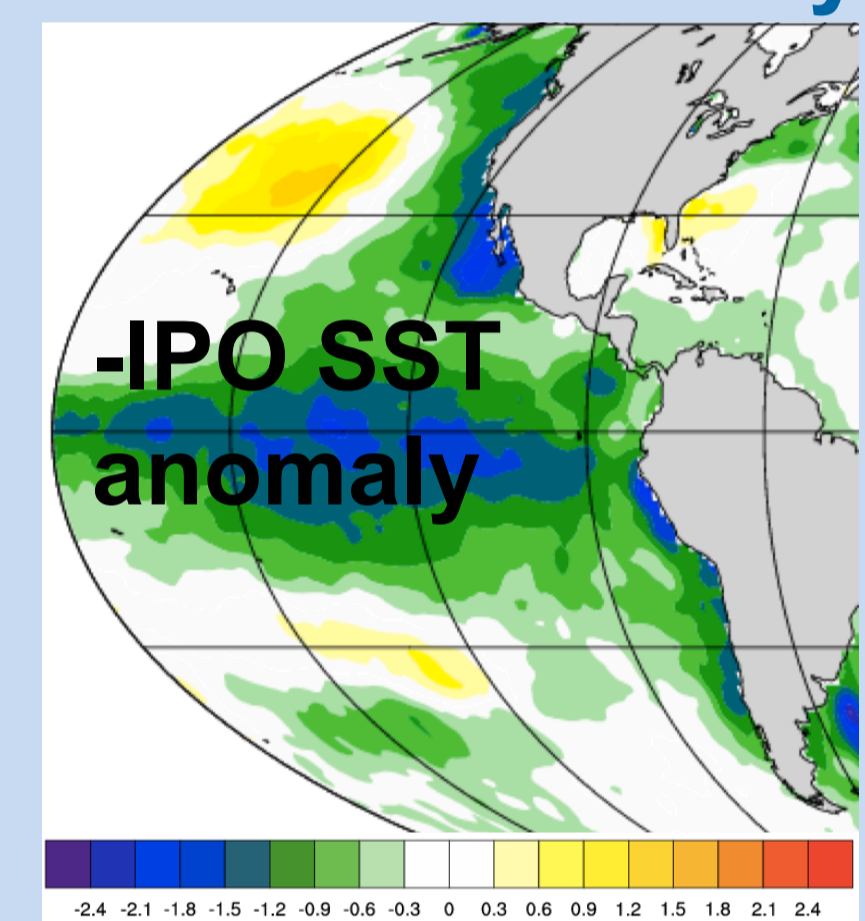
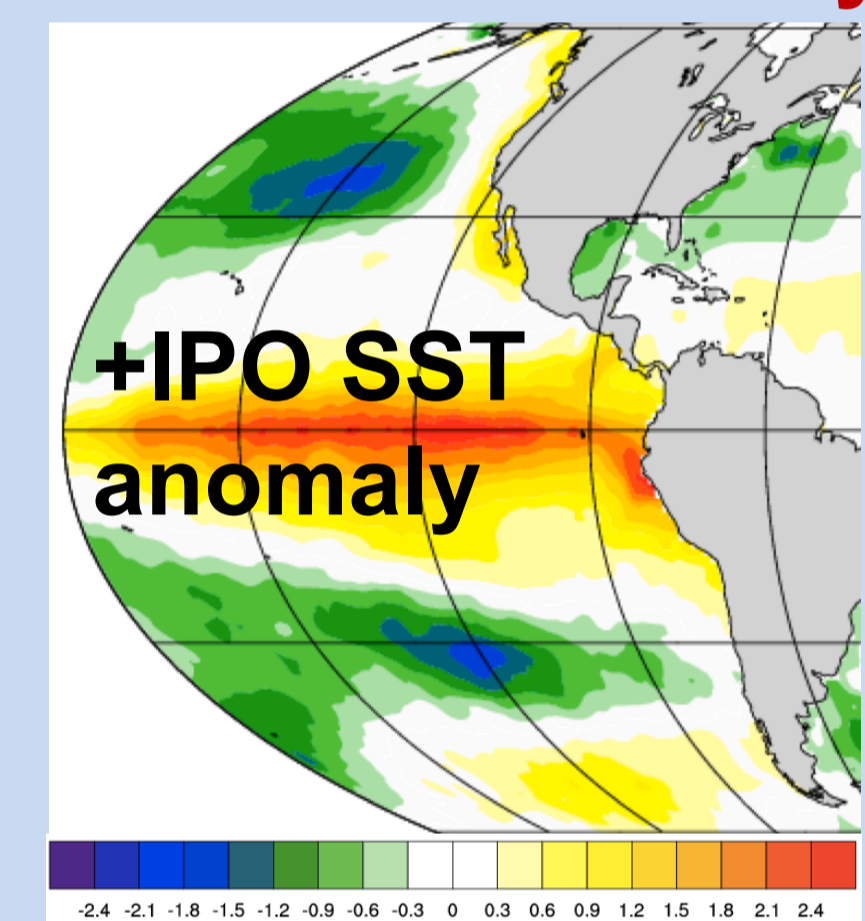
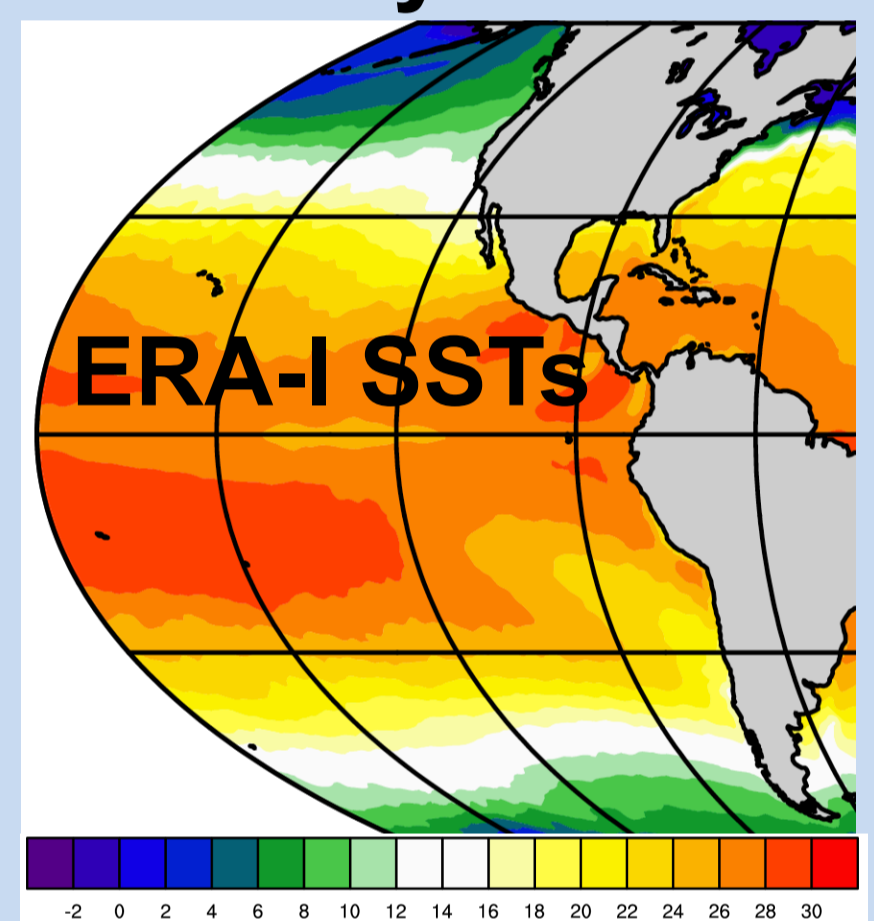
2. Approach

Ten-member ensemble simulations of the 2016/2017 season under opposite phases of the Interdecadal Pacific Oscillation (IPO), using the global Model for Prediction Across Scales at 120km grid spacing.

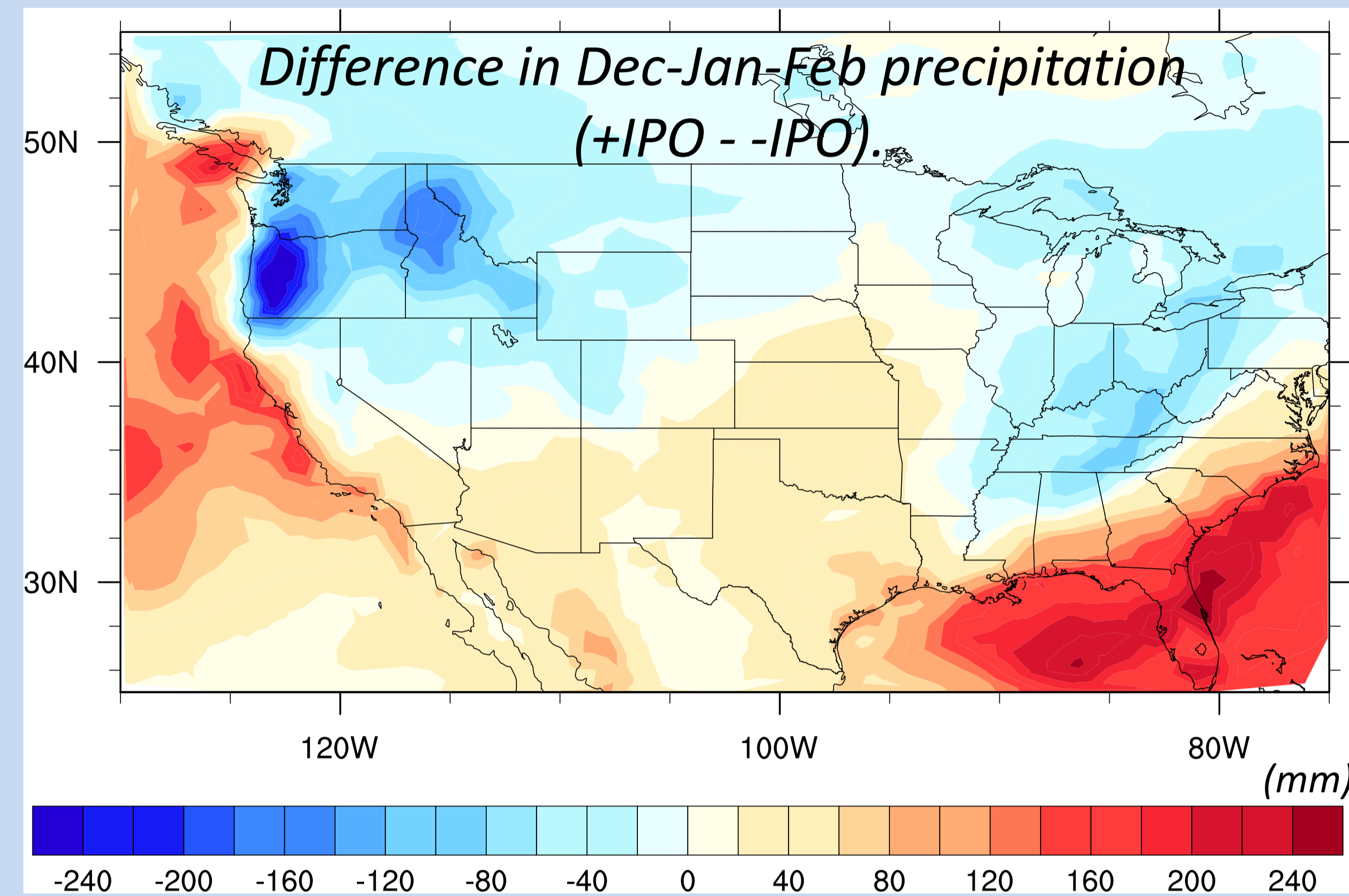
Control Ensemble
Reanalysis SSTs

+IPO Ensemble
Add +IPO anomaly

-IPO Ensemble
Add -IPO anomaly

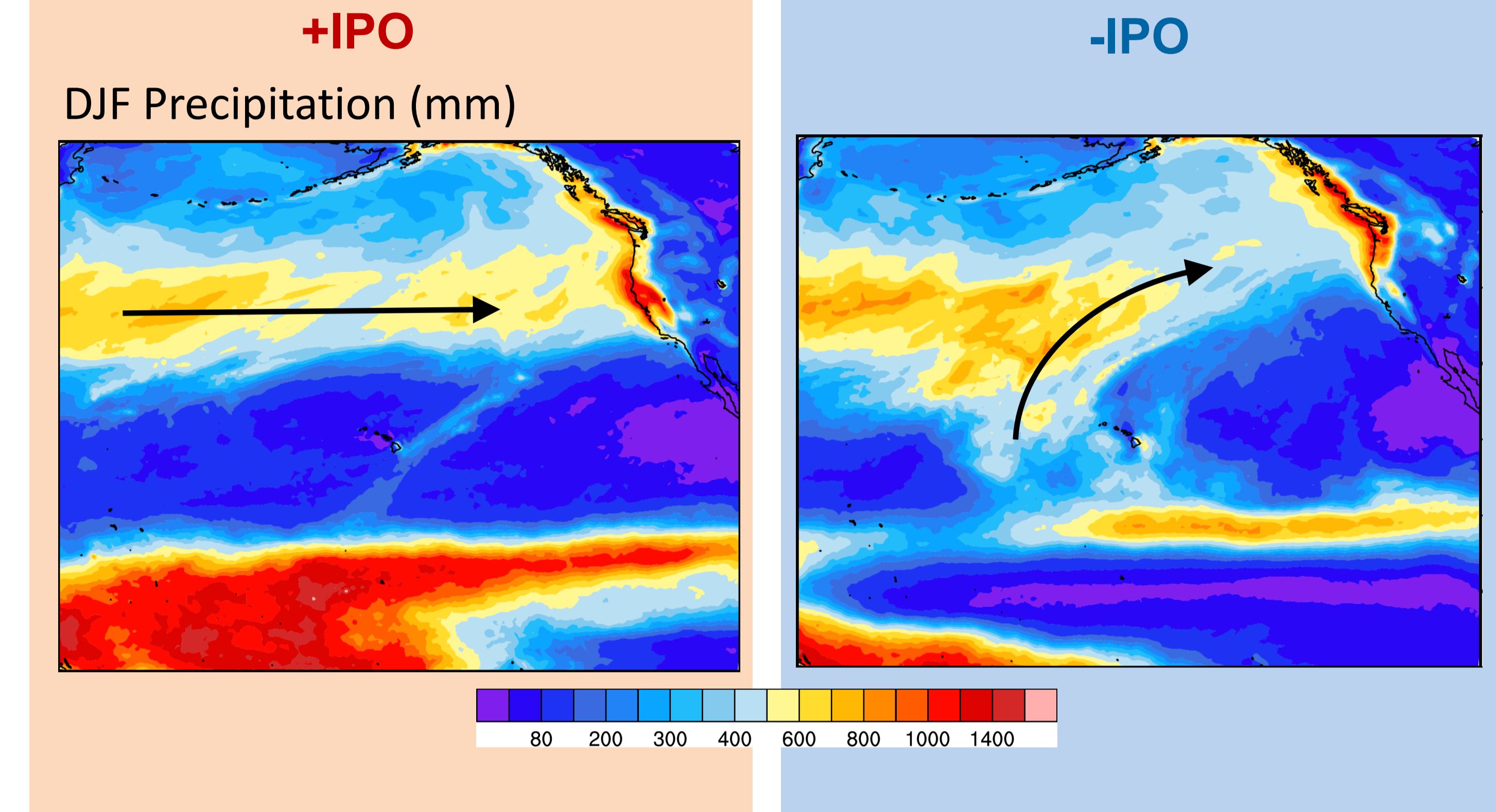


3. +IPO increases precipitation over Coastal and Southern California



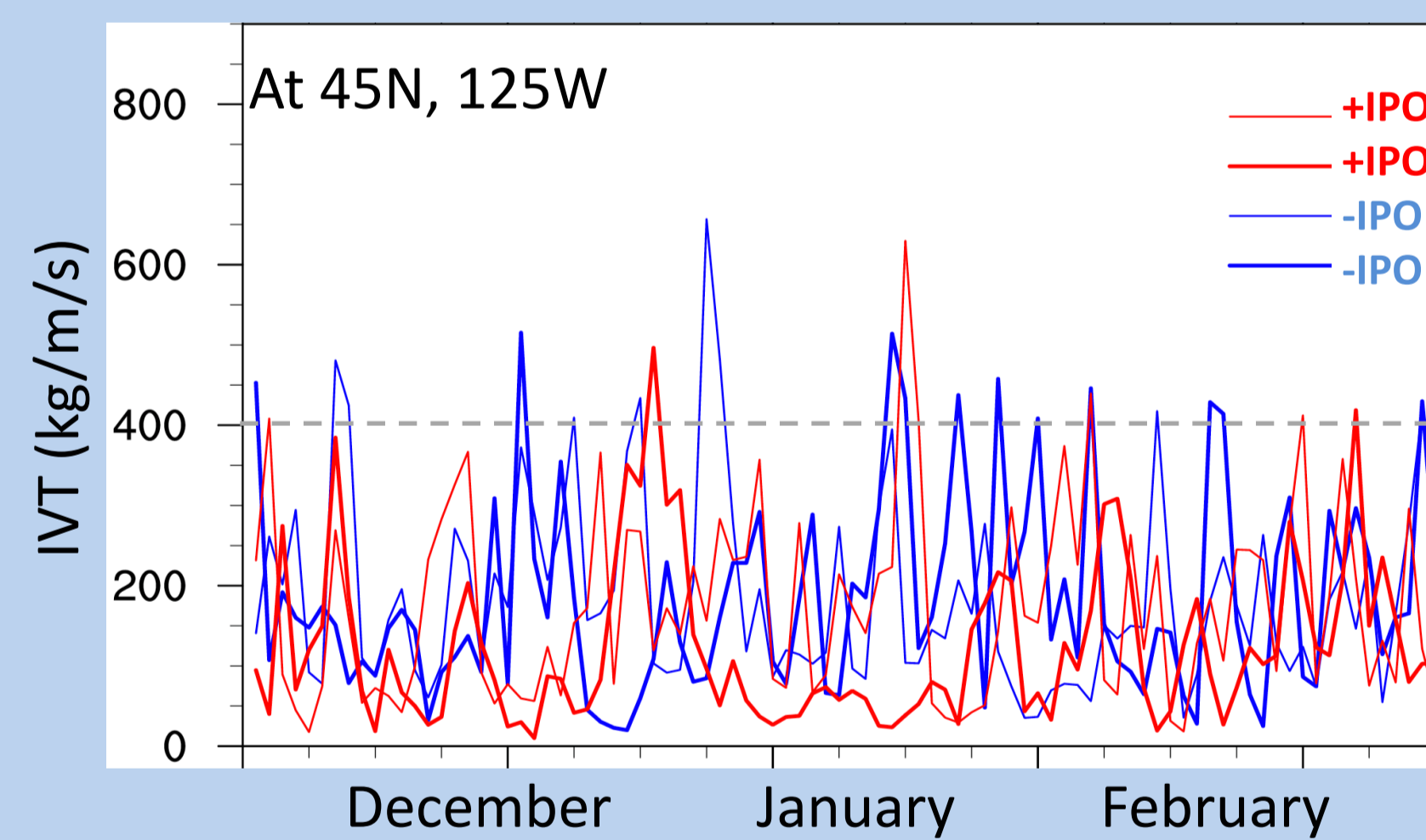
Morss et al. (2018)

5. IPO modifies connection to tropical moisture

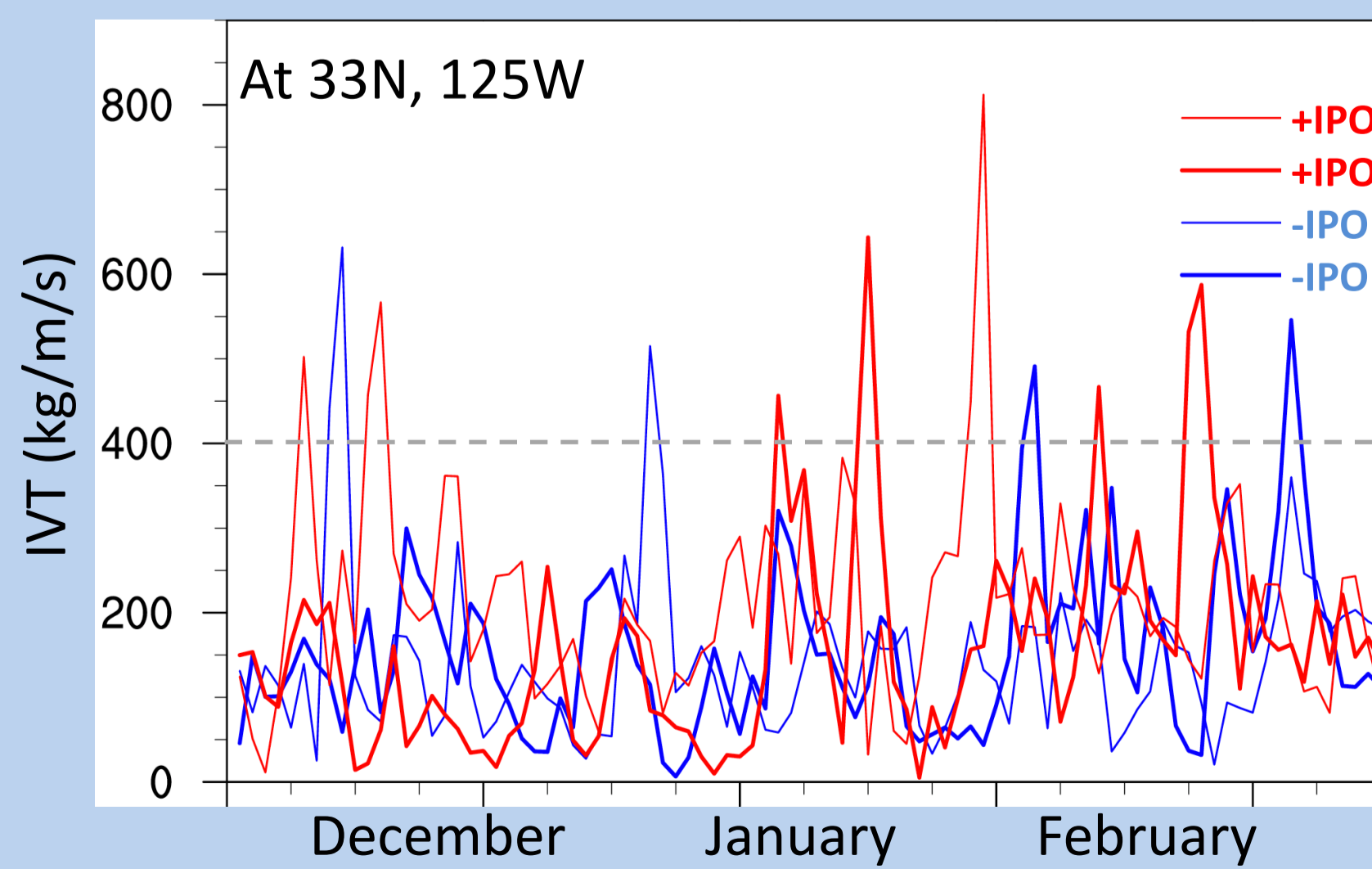


4. IPO modifies latitude of AR landfall

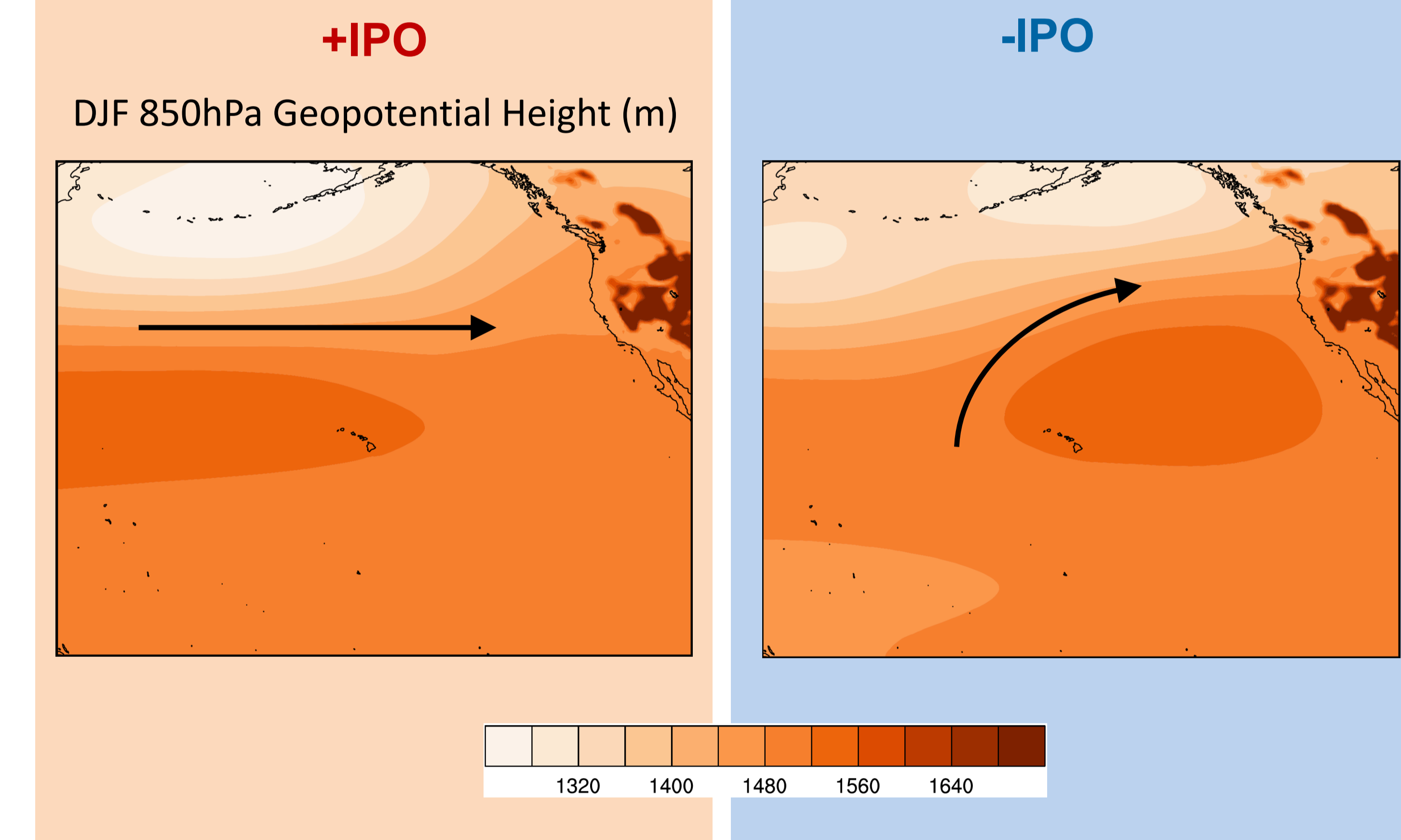
Pacific Northwest:
2.3 times the number of strong ARs in -IPO than +IPO



Southern California:
1.8 times the number of strong ARs in +IPO than -IPO



6. IPO modifies regional dynamics



Reference:
Morss RE, Done JM, Lazrus H, Towler E, Tye MR (2018) Assessing and Communicating Uncertainty in Decadal Climate Predictions: Connecting Predictive Capacity to Stakeholder Needs. CLIVAR Variations, 16, doi:10.5065/D62N513R

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This work contributes to the UDECODE (Understanding Decision-Climatic Interactions on Decadal Scales) project. UDECODE explores the role of decadal climate information for water management decisions.
www.mmm.ucar.edu/udecode

