Maria
Gehne
CIRES CU Boulder and NOAA PSL
Juliana Dias, Michael Jacox, Allison Cluett, Dillon Amaya, Michael Alexander, Jamie Scott
Oral
Forecasts of California Current System (CCS) ocean anomalies, and seasonal upwelling in particular, are important tools for marine resource management. Therefore detailed knowledge of the skill of these forecasts on timescales of several weeks, and identifying atmospheric patterns that lead to more accurate forecasts, is of interest. Here we assess the skill of sea surface temperature (SST), sea surface height (SSH) and mixed layer depth (MLD) in the European Center for Medium-range Weather
Forecasting (ECMWF) S2S reforecast data set for the years 2002-2021. We use Ensemble Sensitivity Analysis (ESA) to identify regions where conditioning forecasts on more skillful atmospheric states at early lead times improves the forecasts of oceanic anomalies in the CCS at later lead times. Conditioning the forecast ensemble error on ensemble members with small atmospheric errors at lead weeks 1 and 2 we show statistically significant smaller errors in the CCS in oceanic variables at lead weeks 2-4. This indicates the potential for more accurate week 2-4 CCS ocean state prediction through identification of potentially more predictable atmospheric states early in the forecast.
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