NASA OCEAN PHYSICS

OCEAN DYNAMICS

OCEAN MIXING

SEA LEVEL RISE

AIR-SEA INTERACTION

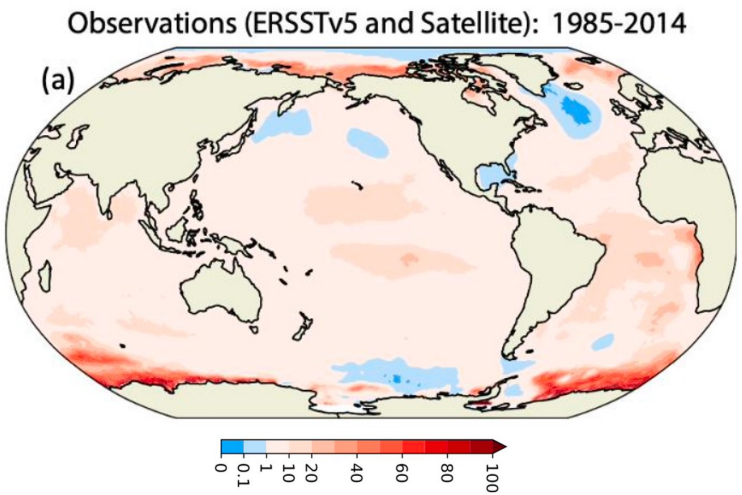
OCEAN EXTREMES

LAND-OCEAN LINKAGES

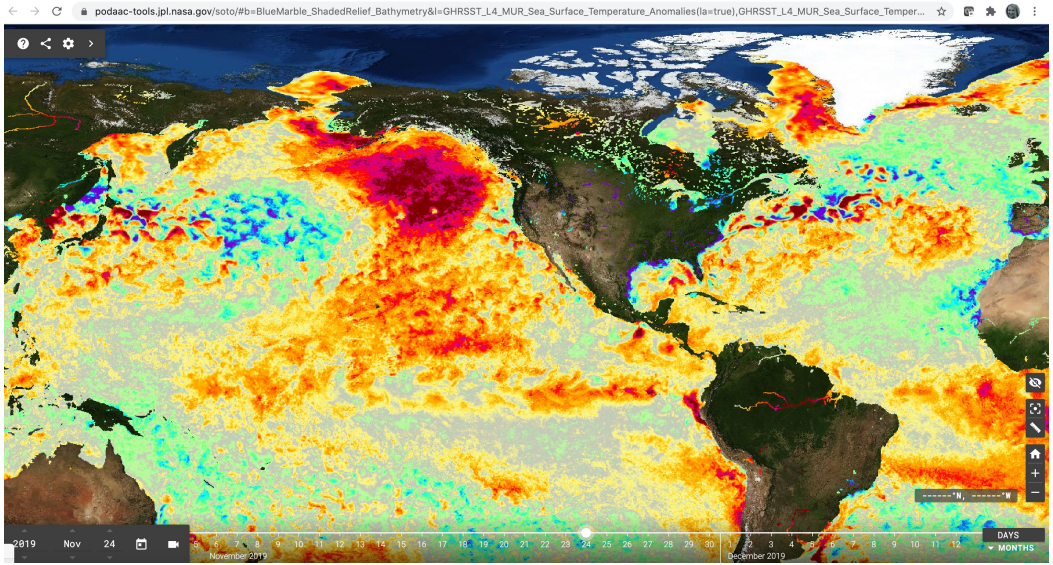
WATER CYCLE

MODELING, DA, AI/ML

Observing and interpreting marine heat waves



Observed probability ratio of marine heatwaves for the 1985-2014 period. Source: IPCC AR6



Example: SST anomaly 24 Nov 2019. Source: NASA SOTO tool

INCREASE IN FREQUENCY, DURATION, & INTENSITY SINCE 1985

PROJECTED FREQUENCY INCREASE BY 2100

SUSTAINING OBSERVATIONS IS NEEDED TO PREDICT MHW IN A NEW CLIMATE