

**Climate SST Buoy Need Network (BNN)**  
**Observing System Simulation Experiments (OSSEs):**  
Scenarios related to various TAO buoy maintenance schemes

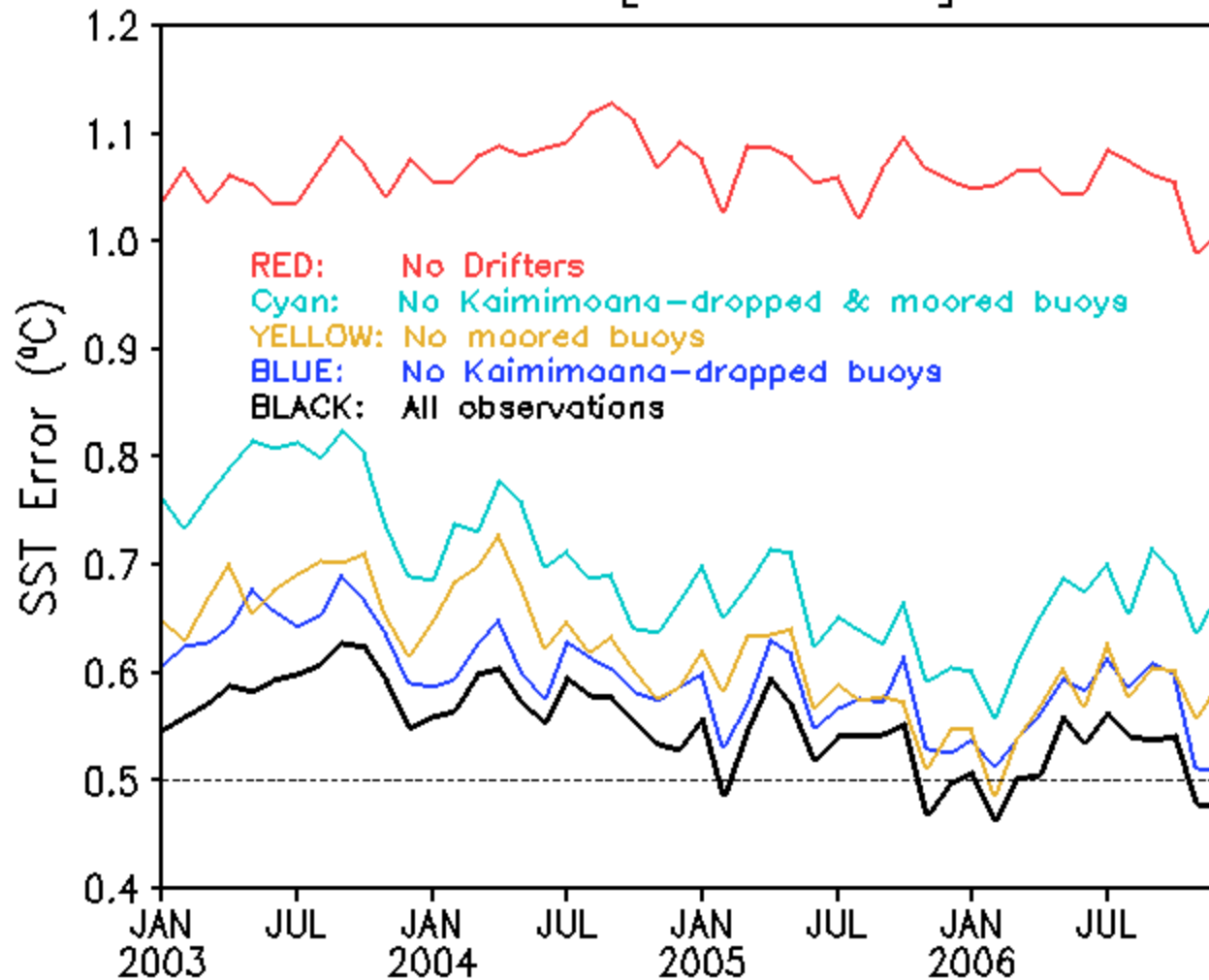
- Issue: What are the effects on the SST Performance Measure by reduced TAO buoy-maintenance cruises, particularly by the aging Kaimimoana ship?
- Related scenarios:
  - 1) Reduced/eliminated (Kaimimoana) cruises also leads to reduced surface drifter deployments in the tropical area
  - 2) No TAO buoy maintenance leads to reduced or unusable TAO data, but drifters are some how maintained as it have been (may be logistically difficult)
  - 3) Is TAO array is enough w/o drifters in this area?

# Experiments Design

- Designs are according to the above three scenarios for the time period Jan'03 – Dec'06. Computations between [20S-20N], all three oceans [can be refined to Pacific if necessary]. All ship obs are used (their effects are small)
  - 1) Remove Kaimimoana-deployed drifters from the datasets (keep all others)
  - 2) Remove all moored buoys but keep all the surface drifters
    - Added: combination removals of 1) and 2)
  - 3) Keep all moored buoys but remove all drifter data

## SUMMARY: PSBE increases for FOUR Scenarios

PSBE: [20°S–20°N]

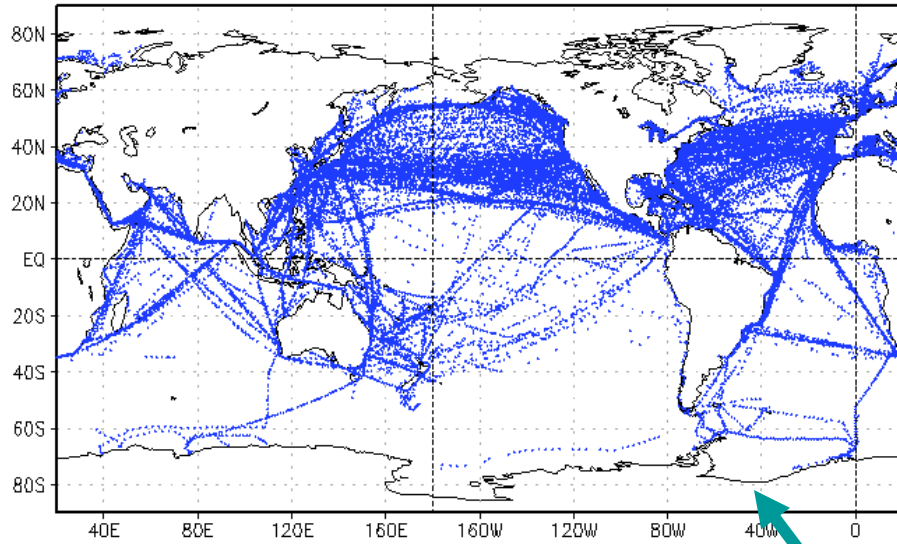


**No surface drifters:**  
Error increase by about 0.5°C

No moored AND  
Kaimimoana-dropped buoys:  
Error increase between 0.1 to 0.2°C  
(combined)

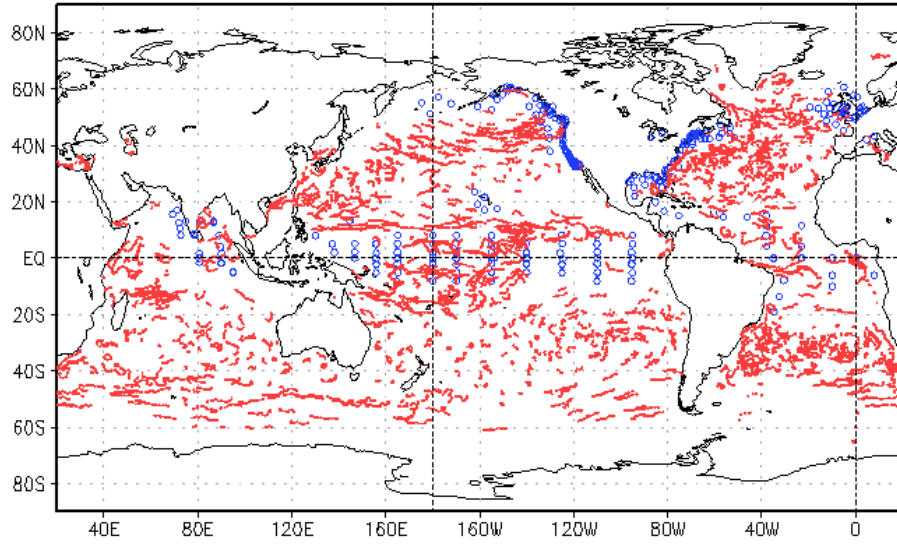
No **moored** OR  
**Kaimimoana-dropped** buoys:  
Error increase between  
0.05 and 0.1°C (by each)

**Ships**  
1 Dec 2006 to 31 Dec 2006



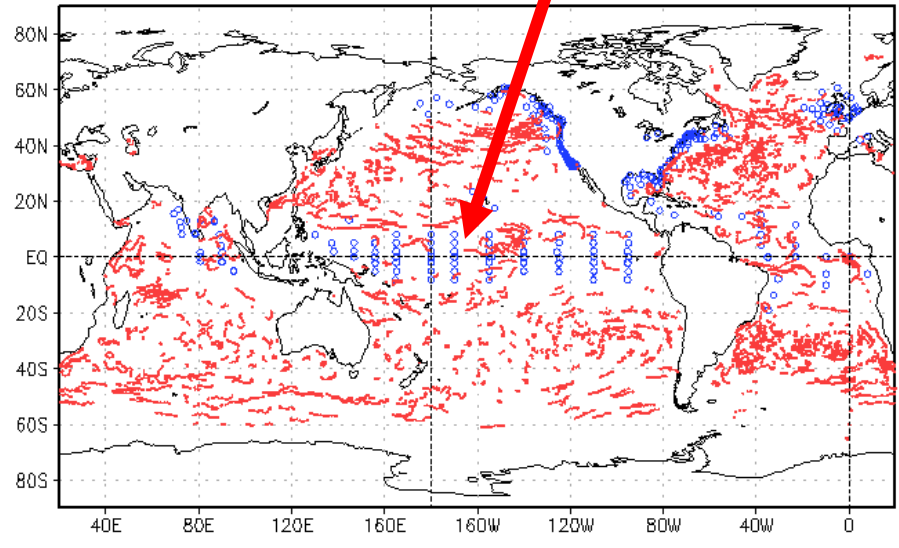
All Observations

**Buoys**  
Surface Drifter: - Moored: o  
1 Dec 2006 to 31 Dec 2006

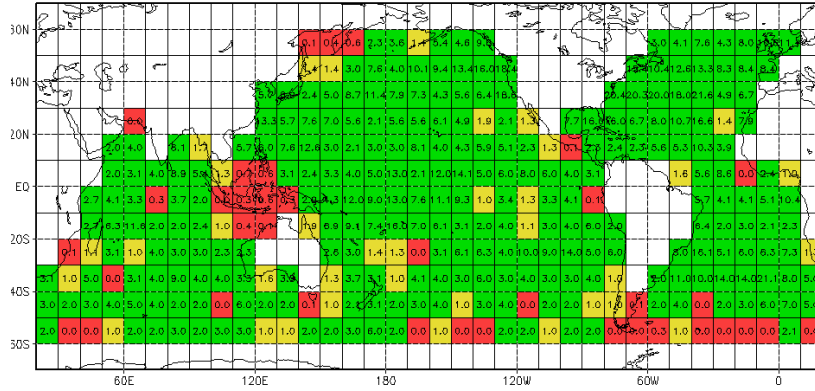


Kaimimoana-deployed drifters are removed

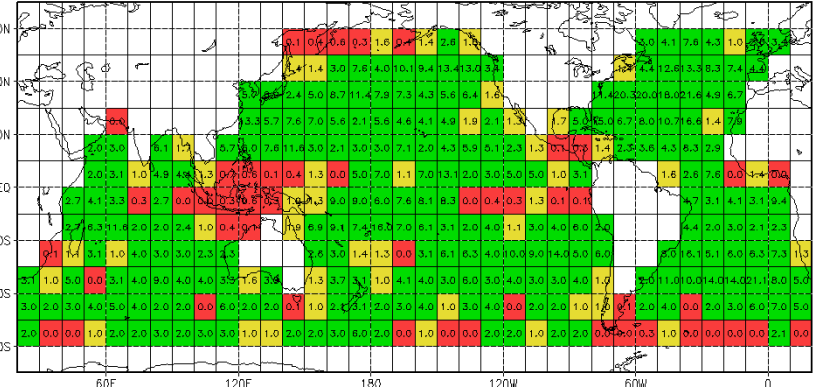
**Buoys**  
Surface Drifter: - Moored: o  
1 Dec 2006 to 31 Dec 2006



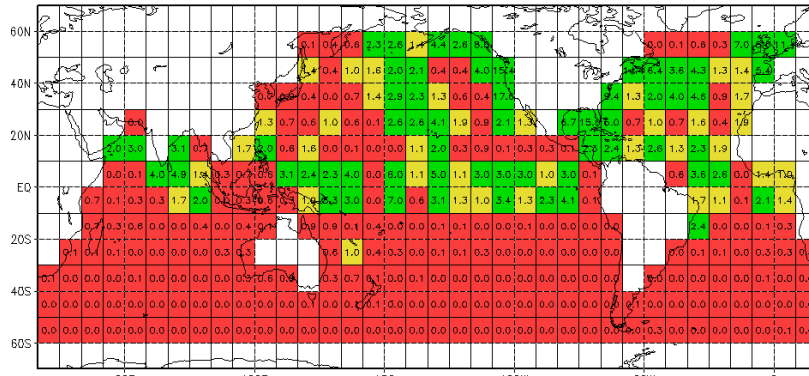
All obs: Averaged Monthly EBD: DEC2006-DEC2006



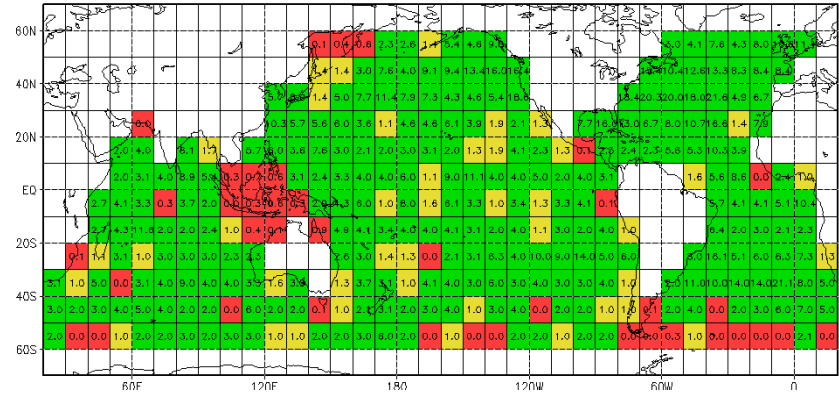
No Moored: Averaged Monthly EBD: DEC2006-DEC2006



No Drifters: Averaged Monthly EBD: DEC2006-DEC2006



No Kai- drifters: Averaged Monthly EBD: DEC2006-DEC2006



No Kai/moored buoys: Averaged Monthly EBD: DEC2006-DEC2006

