

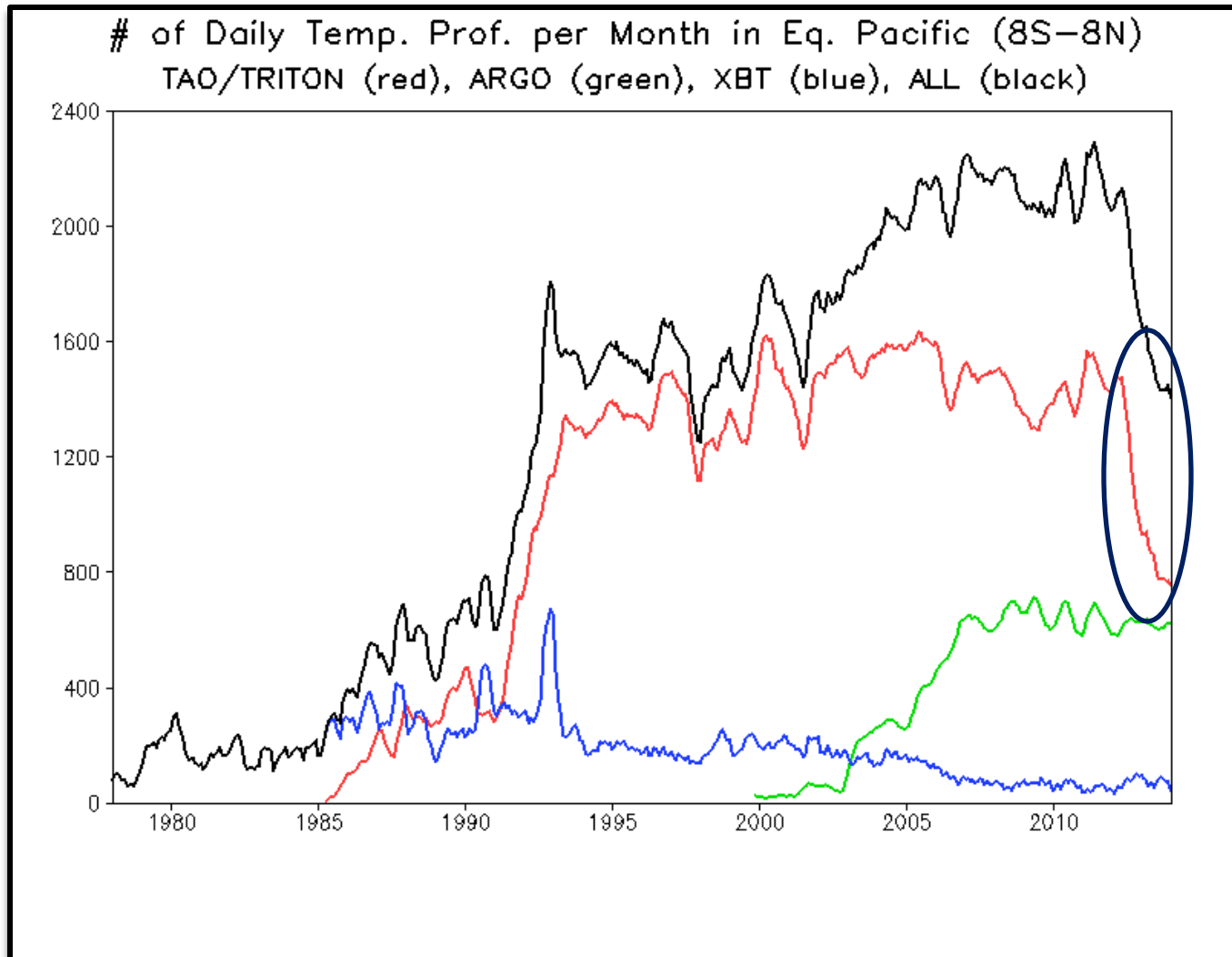
Ocean Analysis and TAO Array

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Tropical Pacific Observing System



Tropical Pacific Observing System 2020 (TPOS 2020) Workshop

- Sponsors
 - Global Climate Observing System (GCOS)
 - Global Ocean Observing System (GOOS)
 - NOAA
 - JAMSTEC
 - Korean Institute of Ocean Science and Technology (KIOST)
 - State Oceanic Administration (SOA)

Workshop Structure

- Terms of Reference focused on requirements for the TPOS
- 65 attendees from 30 institutions and 13 countries
- 14 invited talks on observing system requirements and implementation, based on whitepapers
- 9 invited talks from agencies with interest in the Tropical Pacific Region
- Discussion sessions, plus closed sessions for review committee
- Report and Recommendations to be delivered to the sponsors.

Goals for TPOS 2020

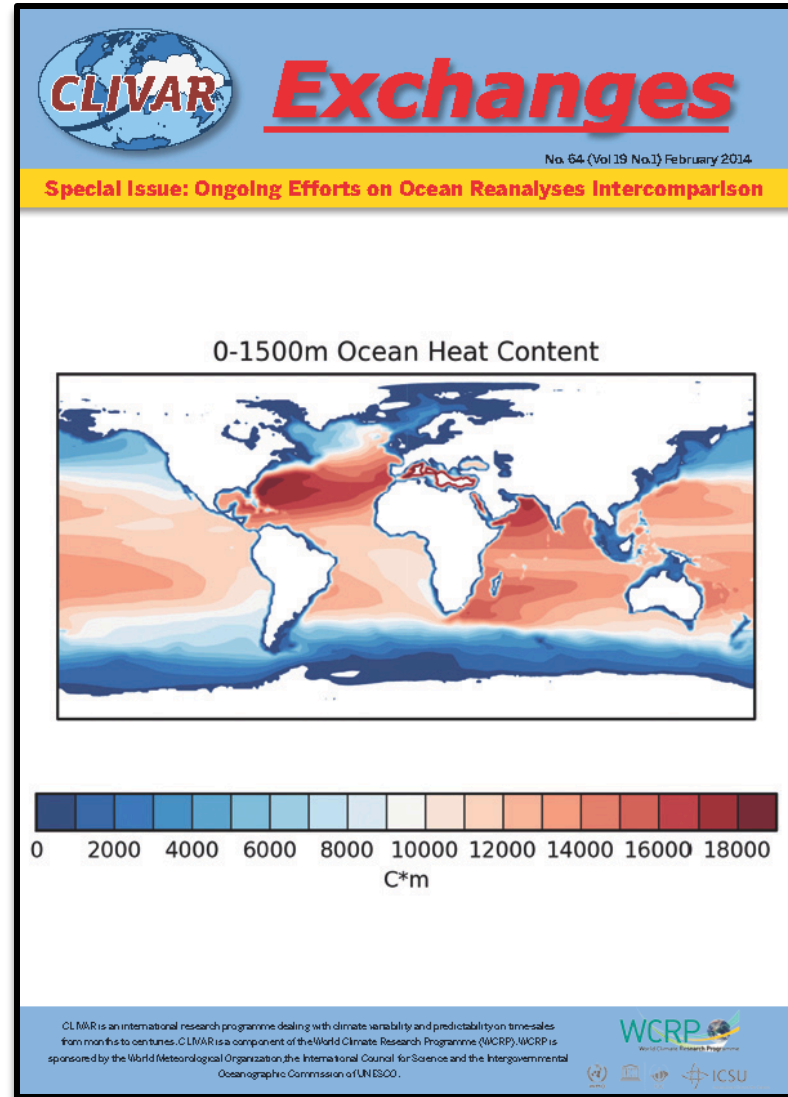
- To refine and adjust TPOS to **monitor, observe, define the state of ENSO** and advance scientific understanding of its causes
- To determine the **most efficient and effective method to support observation** systems for ocean and weather and climate services of high societal and economic utility, including underpinning research
- To advance/refine the degree to which the **tropical Pacific** (physical and biogeochemical) and its climate impacts are **predictable**
- To determine how inter-annual to multi-decadal variability and human activities impact the relation between marine biogeochemistry and biology to carbon budgets, food security and biodiversity'

Recommendations: Addressing gaps, new Requirements, Formation of Task Teams

- It is recommended that 4 task teams are set up focused on defining requirements
 - Evaluating broad-scale ocean observing system
 - Diurnal variability
 - Western boundary currents
 - **Modelling, assimilation, and synthesis**...to assess impact of TPOS on modeling and prediction systems

CLIVAR Global Synthesis and Observations Panel GSOP

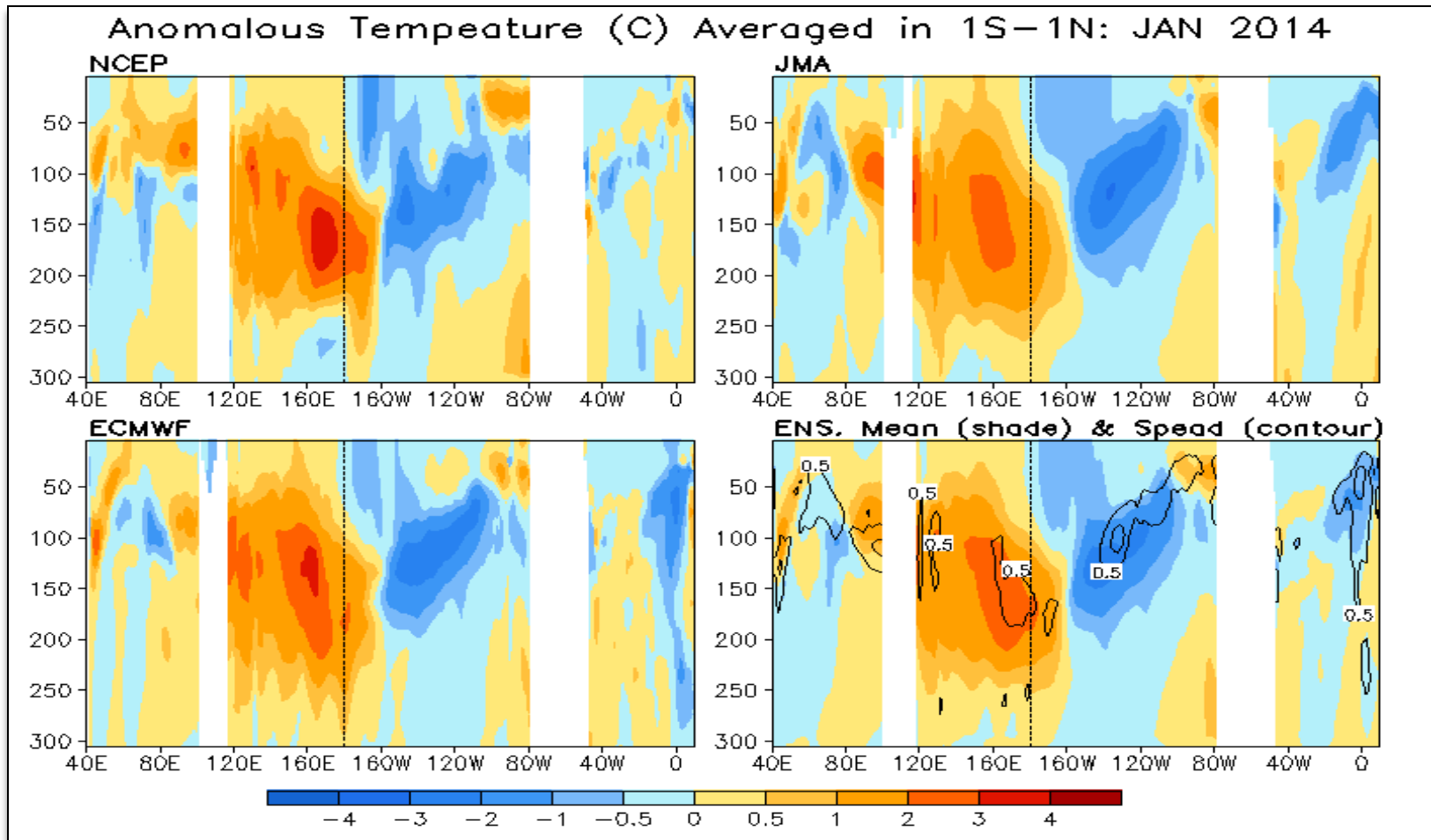
- Ocean reanalysis inter-comparison activities



Some Questions of Relevance to WGSIP

- In the context of seasonal prediction systems
 - What is the contribution of tropical Pacific observing system to prediction skill?
 - What is the relative contribution of observations over different part of the basin?
 - What is the role of SST observations and coupling in providing sub-surface information?
 - Understanding performance of ENSO predictions?
 - Initialization and perturbation generation

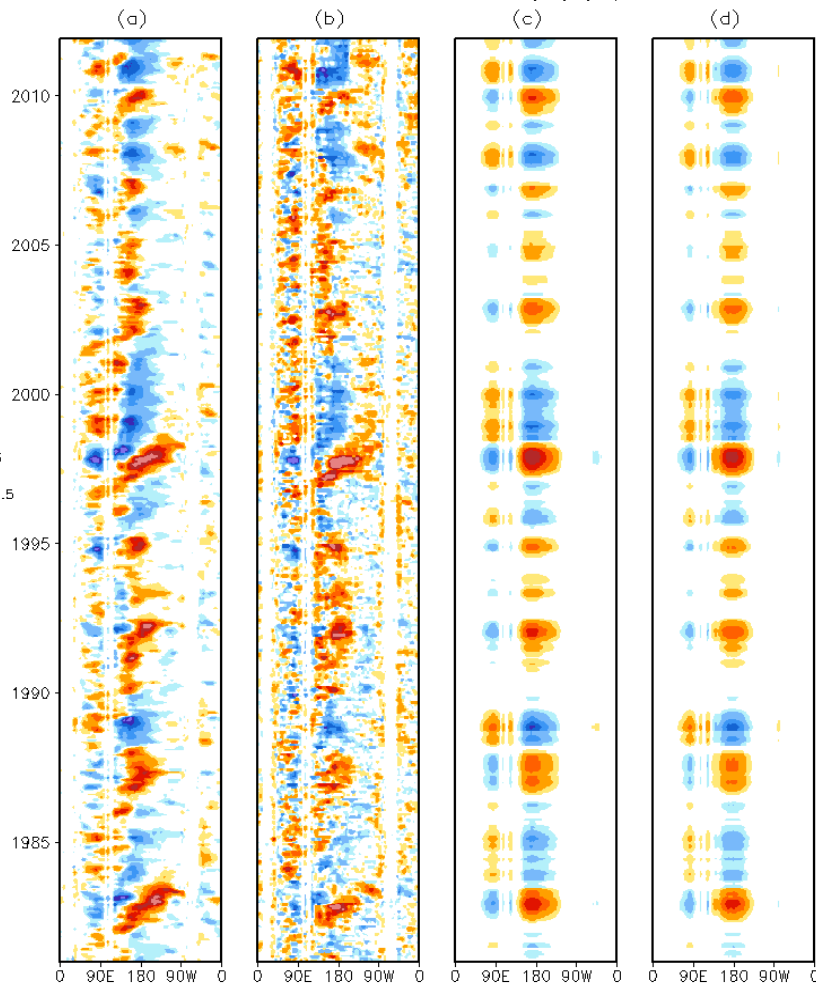
Comparison of Various ODA



(http://origin.cpc.ncep.noaa.gov/products/GODAS/multiora_body.html)

Influence of Specifying SSTs

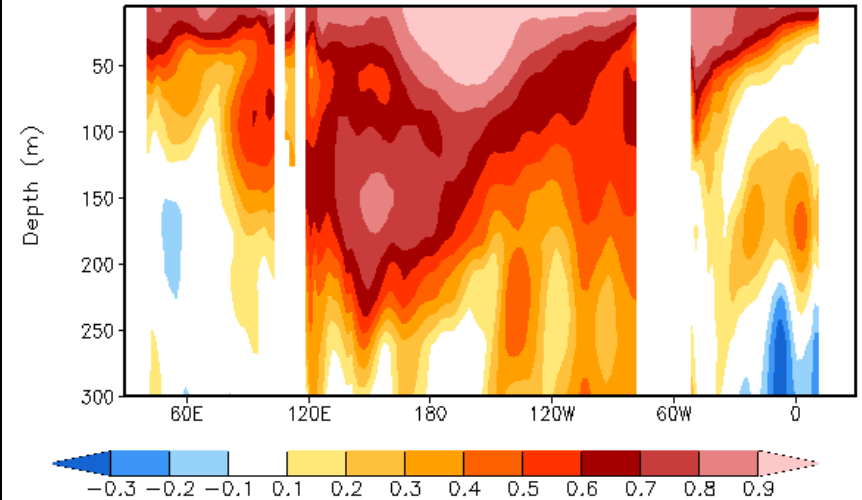
10-m Zonal Wind Anomaly (m/s)



OBS

OBS

AC (with 9 ensemble mean)



Kumar, A., et al., 2014: How much of monthly subsurface temperature variability in equatorial pacific can be recovered by the specification of sea surface temperatures? *J. Climate*, **27**, 1559-1557

- Recommend that WGSIP endorse efforts related to
 - Sustaining tropical Pacific observing system
 - TPOS task team #4
 - Ocean analysis inter-comparison efforts