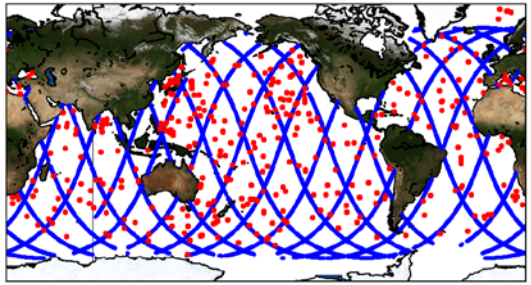
Analysis and Prediction of the Upper Ocean Using GEOS iODAS

Global Modeling and Assimilation Office

Observations Assimilated

In-situ and satellite observations are used to produce global ocean and sea-ice analyses using the GEOS iODAS.

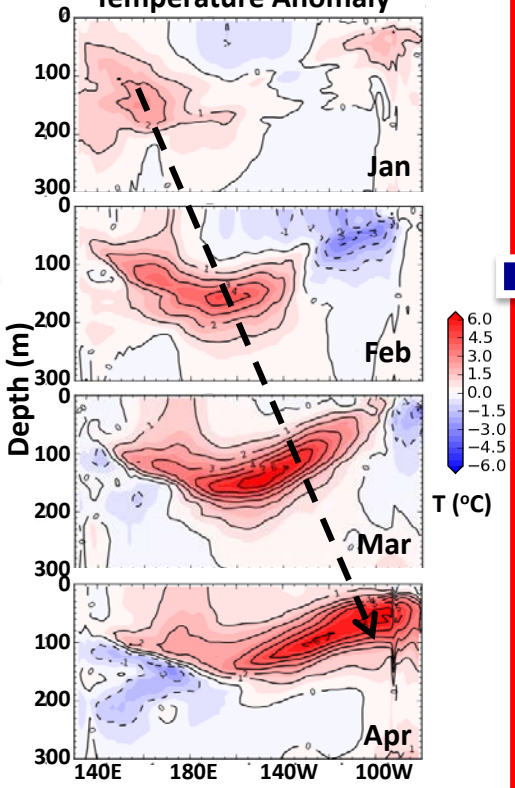


Altimeter data and **Argo float** Locations on January 1, 2014

In addition to initialization of the GMAO's seasonal forecasts, the iODAS output is used by a national project to monitor ENSO and assess uncertainty in subsurface temperature analyses. Forecasters thus have an informed, on-going assessment of the quality of ocean reanalysis products.

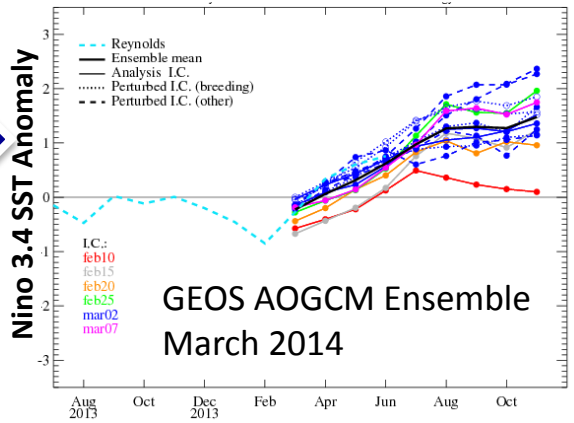
Ocean Analysis

Equatorial Pacific Temperature Anomaly



Seasonal Forecasts

The ocean analyses are used as initial conditions for seasonal forecast runs with the GEOS-5 AOGCM. An ensemble is produced, using different start dates and by perturbing the initial conditions.



The ensemble shows the likely timing and strength of ENSO events. For late 2014, a warm ENSO event is predicted, shown here for the ensemble initialized in March. Research work uses the forecasts to study the factors that impact prediction skill.