

MR02-K02 Cruise Summary

Observation summary

TRITON buoy deployment:	8 sites
TRITON buoy recovery:	8 sites
TRITON buoy visit:	1 site
ADCP subsurface buoy deployment:	1 site
ADCP subsurface buoy recovery:	1 site
CTD(Salinity, Temperature, Depth):	25 casts
XCTD (Salinity, Temperature, Depth):	30 times down to 1000m
Surface meteorology:	continuous
ADCP measurements:	continuous
Surface temperature, salinity measurements by intake method:	continuous

Other specially designed observations have been carried out successfully.

Observed oceanic and atmospheric conditions:

This MR02-K02 cruise was carried out under the early stage of next coming El Nino in 2002. The data from TAO/TRITON buoy array indicates that, in December 2001, the strong westerly wind burst event occurred around the equator 156E. Responding of ocean to this event, the positive dynamic height anomaly from the TAO/TRITON data indicates the generation of equatorial Kelvin wave, and it started moving eastward, which accompanied the eastward moving SST anomaly along the equator. This oceanic response to the atmospheric forcing caused the eastward displacement of warm water pool and the El Nino event in 2002. The TRITON buoy data will provide the precise information on the 2002 El Nino with the TAO buoy data.

During this cruise, the sea surface temperature (SST) along 156E, the SST was higher than 29 and the temperature and salinity vertical section along 156E showed no indication of equatorial upwelling. The surface current measured by shipboard ADCP indicated the eastward current from 5N to 2S along 156E, and the surface wind observed on the R/V Mirai indicated the weak westerly wind along 156E. Such conditions were probably associated with the eastward movement of warm water pool. We often met heavy rainfall events during cruise in the tropical area. The surface salinity indicated lower than 34.5 psu, which probably associated with the rainfall events and the eastward current.