How can KIOST contribute to TAO-Triton Array?

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the 15th POGO Meeting
Hobart, Australia

Over 30 Years of Operating Data Buoys in the Tropical Pacific Ocean

- Data recovery rate in 2013 was less than 50%
- NOAA and JAMSTEC want to reform the Tropical Pacific Ocean Moored Array System.
- NDBC(NOAA) needs more ship-time to operate TAO array.
- JAMSTEC is about to give up 3 vulnerable stations, and replace them into wave/underwater gliders.
- Both feel difficulty to gather data from the buoys, and need to change the method of data gathering.
What have we got from the array?

- Climate-related Research (ENSO, PDO, ITCZ, WWB...)
- Thermocline Mixing, Eq. Curr. (EKW, NEC, SEC, EUC, NECC)
- Tropical Pacific Network of Air-Sea Monitoring
- Real-time Data for ENSO Prediction Models

Should we continue to do the array?

- New Scientific Issues ?
- Shift of El Nino pattern \( \text{SST}_{\text{max}} : \ E.P. \rightarrow C.P. \)
- Mechanism & Variability of CP-EL Nino
- Direct measurements of NEUC and STCC, and WBUC
El Nino in a changing climate

- Central Pacific El Nino is more often in late 20th century

(from Yeh et al., 2009, Nature)

KIOST’s New Research Vessel

- KNRV will be launched in Dec. 2015
- Ship-time in the Pacific (50%), Indian (40%), others (10%)?
- in the Pacific Ocean
  - W.B. (Mindanao Curr., Indonesian TF)
  - W.P. (NEC/NEUC/NESC, mixing process, acidification)
  - C.P. (TAO array ?? → NEC/NEUC/STCC)
  - E.P. (propagation/separation of Eq. Curr.)
- in the Indian Ocean
Can KIOST take over 2 TAO lines?

- Research Proposal must be accepted as by MOFA, Korea
- Even accepted, budget can be variable (~ 10 years!)
- 165°E
  2 ADCP moorings at 5°N, 2°N since 2013
  2 ADCP moorings at 5°S, 2°S since ??
- Dateline?
  more ADCP moorings along the line ??
**In situ Deployments in 2012**

- **PIES mooring**
  - URI (USA) – mooring 5 PIES in the NW Pacific
- **Surface Drifter**
  - UW (USA) – deploying 9 ARGO (EM-APEX) floats
  - NOAA (USA) – deploying 19 surface drifters (Argos)

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**KIOST Programs with moored buoys**

- **Pacific**: TAO-WPM-TRITON (NOAA-KIOST-JAMSTEC)
- **Indian**: joining RAMA network (?)
- **Indonesian Seas**: TIPNet (KIOST)

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**Global Tropical Moored Buoy Array**