







# NATIONAL REPORT OF CHINA

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# 1. CURRENT PROGRAM STATUS

## -----STATE OCEANIC ADMINISTRATION (SOA)

- Number and type of buoys:

- (a) Deployed during the year: 62

- 4 10m moored buoy

- 3 3m moored buoy

- 5 2.4m moored buoy

- 1 submerged buoy

- 1 Deep ocean mooring

- 47 Argo float

- 1 air-deployable polar buoy

- (b) Operational at 31 July: 56

- (c) Reporting on GTS at 31 July: 42

- Purpose of program:

- ◆ support the operational forecasting and warning service

- ◆ ocean state and climate monitoring

- ◆ internal wave research

- Main deployment area:

- China Seas

- the Antarctic Ocean

- the Arctic Ocean

- tropical Indian Ocean



# 1. CURRENT PROGRAM STATUS

## ----- CHINA METEOROLOGICAL ADMINISTRATION (CMA)

- Number and type of buoys:
  - (a) Deployed during the year: 2  
10m diameter Moored buoy
  - (b) Operational at 31 July: 2
  - (c) Reporting on GTS at 31 July: 1
- Purpose of program:
  - ◆ support the operational forecasting and warning service
  - ◆ ocean state and climate monitoring
- Main deployment area:  
South China Sea



## 2. FUTURE DEPLOYMENT PLAN

Agency	Number and type of buoys planned for deployment in next 12 months		Deploy location
SOA	9	1 3m diameter buoy	South China Sea
		1 6m diameter multi-parameter buoy	
		5 SAMS sea ice temperature buoy	Central Arctic Ocean
		1 Submersible buoy	Tropical Indian Ocean
		1 Bailong deep sea mooring buoy	
CAS*	21	20 GPS-S buoy	West Pacific
		1 3m diameter buoy	East China Sea

\*CAS: Chinese Academy of Sciences



### 3. TECHNICAL DEVELOPMENT

- State Oceanic Administration (SOA) developed small airdrop buoys CALIB and sea ice temperature buoy SAMS to monitor the polar sea ice drift and study the sea ice thermodynamic characteristics.
- South China Sea Branch of SOA independently researched and developed the “Primary and secondary buoys anchored system against strong currents”, and had been granted a patent issued by the National Intellectual Property Office.
- North China Sea Branch of SOA added directional wave sensor on the mooring buoy to increase wave measurement. All large buoys are installed the dual-sensor control system, and all conventional sensors are equipped with dual-backup mode. Communication control system is upgraded to support a variety of means of communication.



### 3. TECHNICAL DEVELOPMENT

- Institute of Oceanography, Chinese Academy of Sciences (IOCAS), developed a real-time data transmission technology, and data delayed sending module for the interface of marine commercial communications satellites, such as the Globalstar. On this basis, commercial GPS location signal from the satellite terminal are sent back to the land-based receive station through the transmission above communication system. By carrying out drifting buoys sea trials, and water dynamics research, IOCAS established the error and the empirical parameters for the buoy and communications systems.



### 3. TECHNICAL DEVELOPMENT

- The Bailong Buoy is designed as a flux-enhanced taut-line deep ocean mooring and is modeled after PMEL's ATLAS system used in TAO, PIRATA and RAMA.



Weather station

a CO<sub>2</sub> system

Four DVS current meters

7 SBE-37 CT sensors  
6 SBE-39 T sensors





## 4. PUBLICATIONS

- Li na, Liu Jiping, Zhang Zhanhai, Cui Lin, and Lei Ruibo. Sea ice temperature and mass balance measurements from ice mass –balance buoy in the central Arctic Ocean. *Acta Oceanologica Sinica*, 2011, 33(2), 20-26.
- Li Yao. The hindcast simulation of 2010 Dalian Oil spill incident by using drift buoy trajectories in North Huanghai Sea. *Oceanography*, 2011 (in Chinese).
- Yu W., M. J. McPhaden, C. Ning, H. Wang, Y. Liu and H. P. Freitag, Bailong buoy: A new Chinese contribution to RAMA. *CLIVAR Exchange*, 2012, Vol. 58, Vol. 17, No.1, 25-27.





# THANK YOU!

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