



## **Ocean Satellite Programs in China**

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# The main functions of NSOAS

- To make strategy and development program on Chinese ocean satellite series and ocean remote sensing application.
- To build, manage, update ground system for Chinese ocean satellites .
- Responsible for real-time receiving and processing of ocean satellite data, archiving and distribution of ocean satellite information products.







# The main functions of NSOAS (continue)

- Preparing satellite-related data formats, developing protocols and standards for data processing and data products.
- Planning, establishing and maintenances of calibration and validation site over sea, organizing validation at sea-based and land-based sites.
- Organizing and coordinating international cooperation and exchanges on science and technology related to ocean remote sensing.







# **Organization Structure**





## **Beijing Ground station** The new station in suburb, Changpin district



## Sanya ground station The new station in Linshui



#### ——牡丹五衛星地面站規划方案設計—









#### **Current Status**

## Ocean Color Satellite Missions (HY-1)

- Objective
  - To measure the ocean color, sea surface temperature, and coastal zone dynamic changing information of global oceans.
- Launched Satellites

Satellite	Launch date	Design Life	Nature	Status
HY-1A	May 15, 2002	2 years	Experimental	Stopped working on Mar. 31, 2004
HY-1B	Apr. 11, 2007	3 years	Operational	In orbit





# Sea Surface Temperature









HY-2里里地南庄用茶机加格就法格估计 服得处理软件















## HY-2A Sea Surface Height

Below maps display the HY-2A sea surface height anomalies compared to Jason-2. Both mission provides very similar signals.



-0.10		-0.05	0.00	0.05	0.10	
	Nbr :	552208	Std Dev : 0.120530	683 Min :	-1.9559236	
	Mean :	-0.0015786413	Median : -0.00405040	125 Max :	1.9538784	



SLA J2 IGDR (m)

-0.10		-0.05	0.00		0.05	0.10	
	Nbr :	703623	Std Dev :	0.11216541	Min :	-1.9872	
	Mean :	0.039108406	Median :	0.0372	Max :	1.7383	

#### HY-2A wind field-Scatterometer



90 percent of the world's sea surface will be covered every 24 hours



#### **Results:** Comparison between RA and Fusion on Coverage





#### Jason-2 Map of Error

#### HY-2 Map of Error







#### contribute to multi-mission system

# Hy-2A, a new contributor to multi-mission system

8.8 17.6 26.4 35.2



cnes



- 35.2 - 26.4 - 17.6 - 8.8 0.0

This figure shows Sea Level Anomalies of Hy-2A, the Chinese mission launched in August 2011.

SLA are calculated by CNES Hy-2A Processing Prototype and filtered at 70 km on a few Hy-2A passes during cycle 24 (August 2012). It underlines the quality of Hy-2A SLA and its potential benefits in the SSALTO/DUACS multi-mission system.

Hy-2A could complement the sampling of current missions and could provide valuable information on the ocean mesoscale variability, particularly in regions of strong ocean activity.











# Thanks

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## HY-2A wind field



In-situ observations from the NDBC, TAO, and JMA buoys are used to validate HY2-SCAT wind. The r.m.s error of wind speed and wind direction are 1.3 m/s and 19.5° respectively.

#### Atmospheric water vapor content



More than 90 percent of the world's sea surface will be covered every 24 hours

Comparison between HY-2 scanning radiometer and NCEP re-analysis data, the r.m.s error is smaller than 2.1948 Kg/m<sup>2</sup>

HY-2 Scatterometer

#### MetOp-A ASCAT



August 26, 2012