Global ocean observing and monitoring activities: Focus on the NEAR-GOOS

Hee-Dong Jeong

East Sea Fisheries Research Institute
National Fisheries Research & Development Institute, Korea

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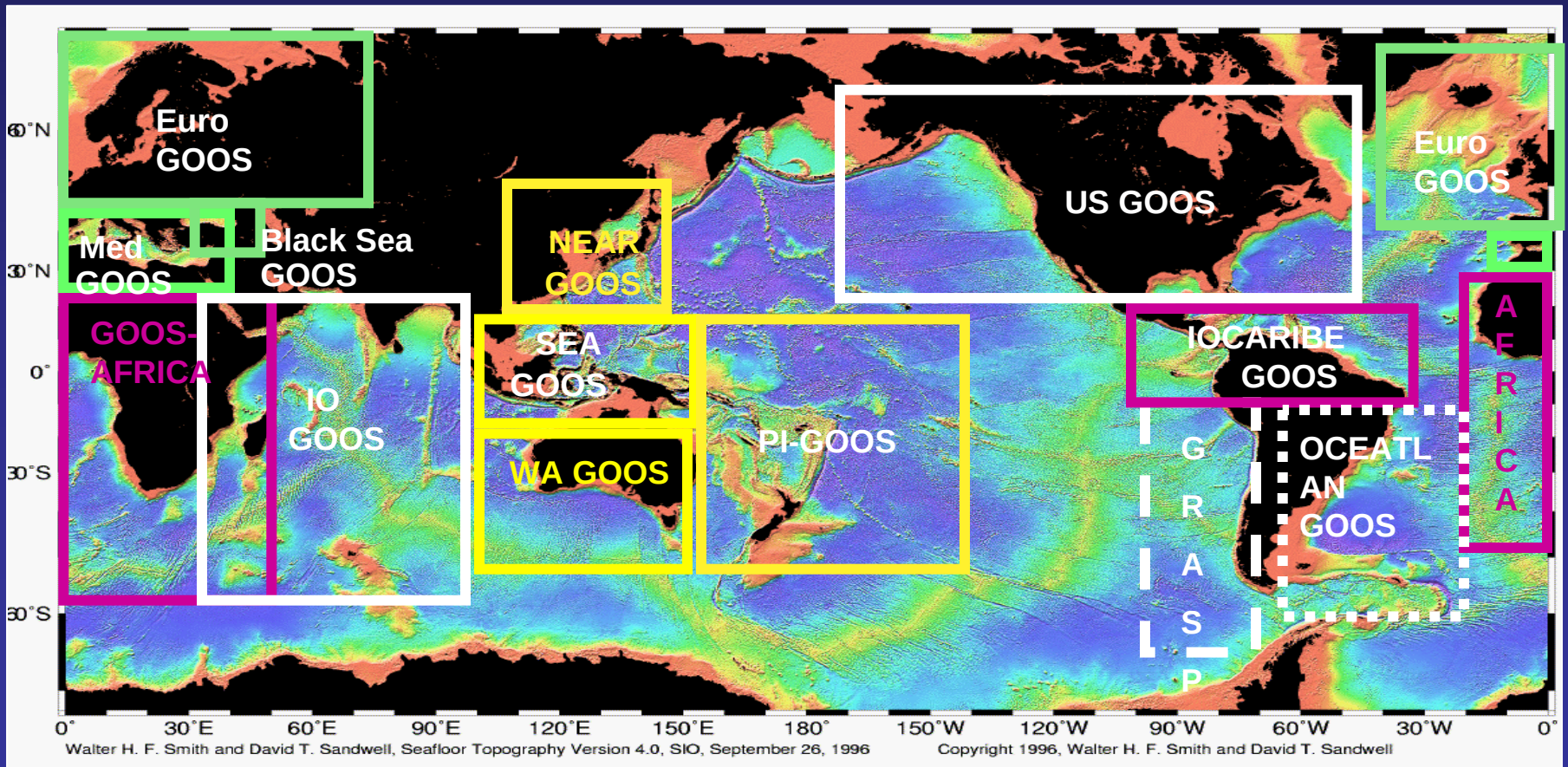
Outline

- Project Description and Management
- NEAR-GOOS in its' first phase
- Implementation of the 2nd phase
- Products
- Future works

Project Description and Management

Project description

North East Asian Regional - Global Ocean Observing System (NEAR-GOOS) is a regional pilot project of GOOS in the North-East Asian Region, implemented by China, Japan, the Republic of Korea and the Russian Federation as one activity of IOC Sub-Commission for the Western Pacific (WESTPAC).



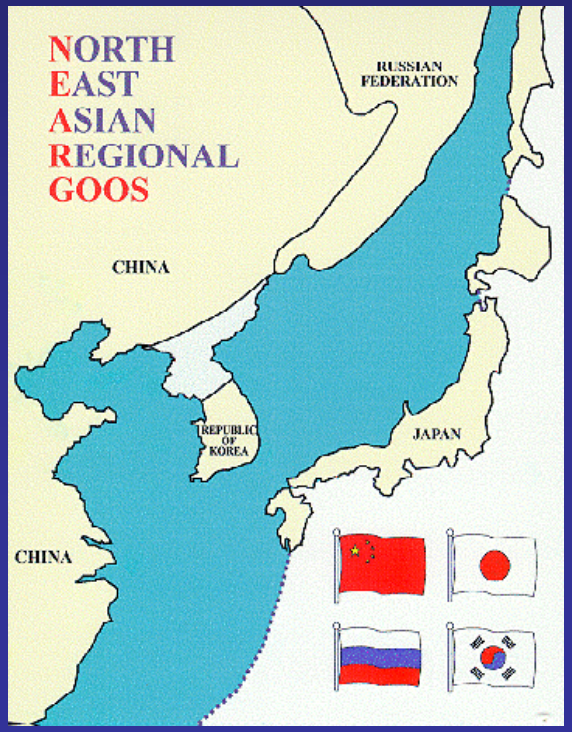
Project management

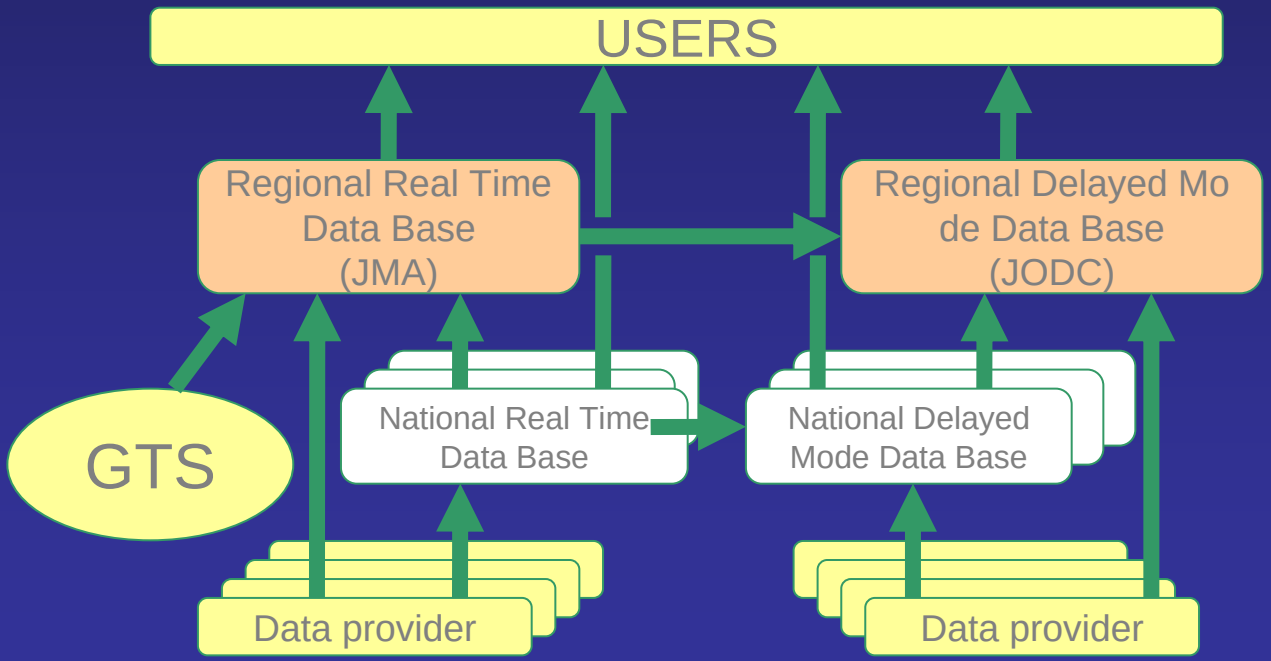
The 14th Session of the IOC/WESTPAC Co-ordinating Committee for the North-East Asian Regional/Global Ocean Observing System (NEAR-GOOS)
8-9 September 2011, Tianjin, China

NEAR-GOOS in its’ first phase

NEAR-GOOS was conceived in 1995 and initiated in 1996 upon the formal adoption of the NEAR-GOOS Implementation Plan and Operational Manual by the 29th Executive Council of the Intergovernmental Oceanographic Commission (IOC) following a recommendation from the WESTPAC Regional Sub commission of IOC earlier in the year. It became one of the first regional pilot projects of GOOS.

The primary aim of the project in its first phase was to facilitate the sharing of oceanographic data in order to improve the availability of information and ocean services in the region.





Free and open access to Regional data bases

The successes of NEAR-GOOS in its first phase have been:

- The consolidation of a functional two-mode ‘distributed’ Internet-based database structure in the member states as a workable model for the enhancement and coordinated handling of oceanographic data at national level

- The linking of this structure with two Regional Databases that are responsible for the receipt and merging of data concerning the NEAR-GOOS region as a whole, thus creating a regional database system which is part of GOOS.

- The adoption and practice of a free and open data exchange policy, predating the formulation of such a policy for GOOS as a whole.

- The implementation of coordinated and approved data exchange management training for regional participants.

NEAR-GOOS Data Bases

The available amount and types of data has increased, and the RTDB and DMDB and the database network web-site has operated and timely updated in each member states.

Country	Data base	Responsible organization	Address
Japan	Regional RTDB	JMA	http://goos.kishou.go.jp
	Regional DMDB	JODC	http://near-goos1.jodc.go.jp
China	National RTDB	NMEFC	http://neargoos.nmefc.gov.cn
	National DMDB	NMDIS	http://near-goos.coi.gov.cn
Korea	National RTDB	KHOA	http://khoa.go.kr/koofs/eng
	National DMDB	NFRDI	http://kodc.nfrdi.re.kr/engmetadata
Russia	National RTDB	FERHRI	http://rus.ferhri.ru/esimo/Projects/Neargoos
	National DMDB	POI	http://www.pacificinfo.ru

Implementation of the 2nd phase

NEAR-GOOS in its second phase

The mission is ‘to develop a comprehensive and sustained ocean observing network in the north east Asian regional seas and coastal regions, especially focused on observations, monitoring and other activities that cannot be easily implemented by the member states acting independently. This network will embrace a wide range of data types and will be accompanied by the member states and as a contribution to the GOOS and other global observing initiatives.”

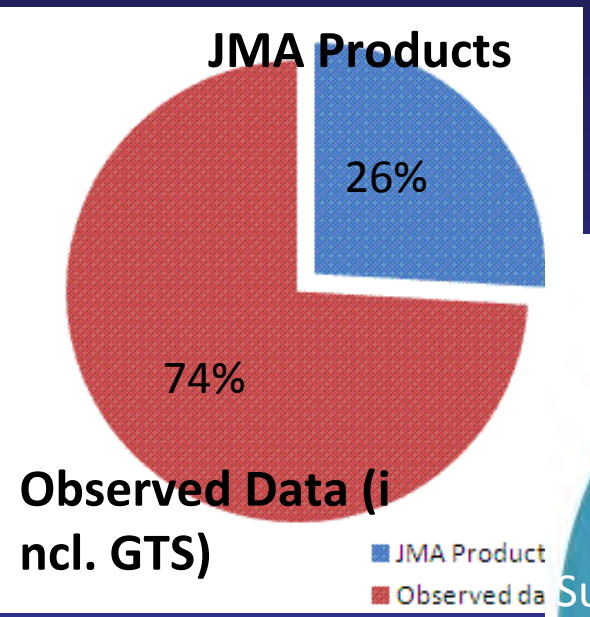
The goal is to ‘development of a basic integrated ocean observing and operational forecasting system in the area adhering to the GOOS principles and building on the data management and exchange mechanisms developed in the first phase through the inclusion of additional parameters, increased coverage in space and time, the generation of a generic suite of data products and adequate quality control and quality assurance procedures”.

Current RRTDB Contents

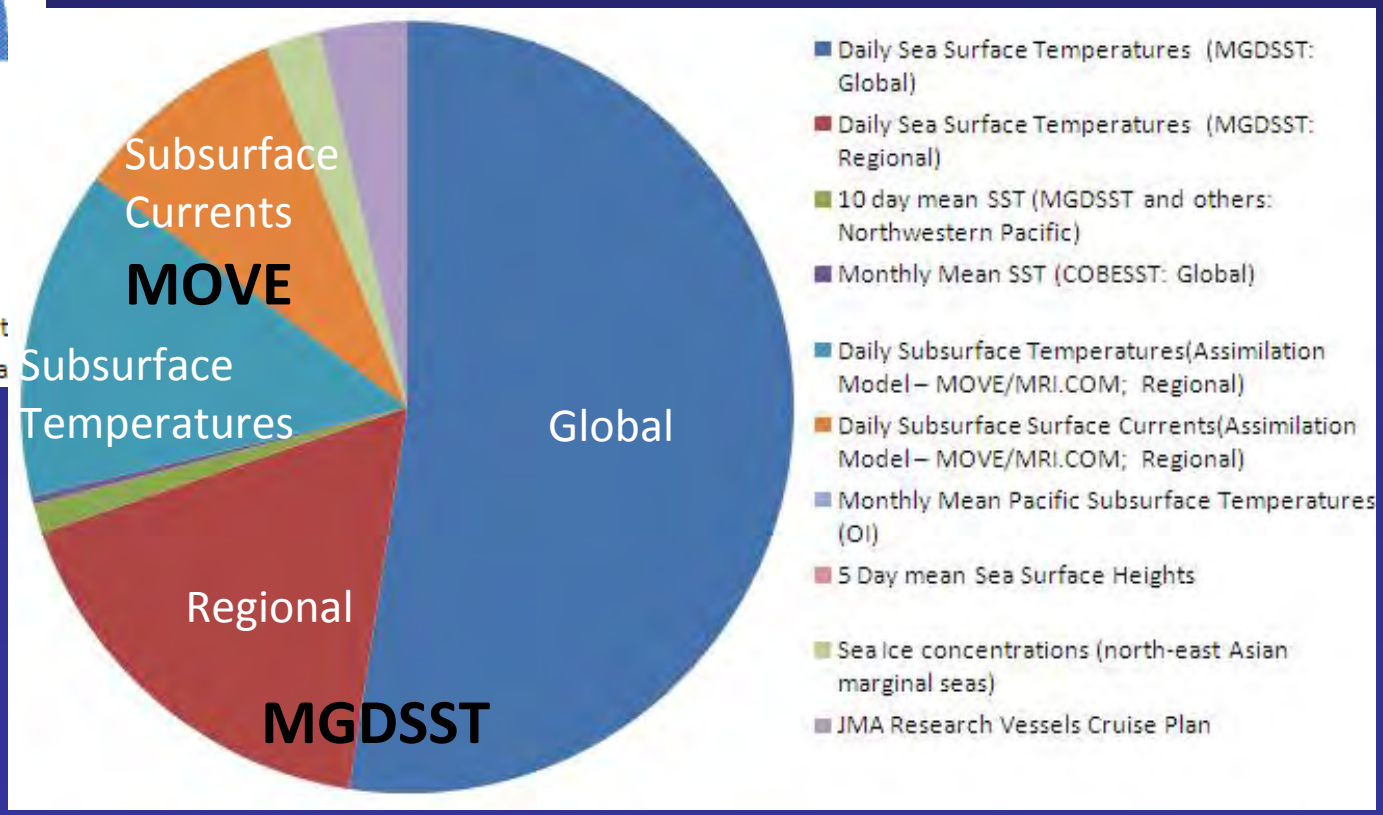
Description of data Source Type	Source	Data Type
1) GTS Reports (FM13 SHIP, FM18 BUOY, FM62 TRACKOB, FM63 BATHY, FM64 TESAC)	GTS	in situ data
2) Data provided by users (Sea Water Temperature observations)	JAFIC	in situ data
3) Decoded Data (Temperatures and Winds)	GTS/ JAFIC	in situ data
4) GTSPP (quality controlled Temperatures and Salinities)	GTSPP	in situ data
5) JMA Products		
- Daily Sea Surface Temperatures (MGDSST: Global, Regional)		
- 10 day mean SST (MGDSST and others: Northwestern Pacific)		
- Monthly Mean SST (COBESST: Global)		
- Daily Subsurface Temperatures and Surface Currents (Assimilation Model – MOVE/MRI.COM; Regional)	JMA	Analyzed GPVs and charts
- Monthly Mean Pacific Subsurface Temperatures (OI) temporally non-active, since Oct 2010		
- Five-day Mean Sea Surface Heights (Jason, Pacific) temporally non-active, since Feb 2009		
- Sea Ice concentrations (north-east Asian marginal seas)	JMA	Charts
6) JMA Research Vessels Cruise Plan New!		

Access to RRTDB (Feb- Jul, 2011)

- Total 263 thousands accesses



Most of the accesses to observed data were for TESAC



NEAR-GOOS Regional Delayed Mode Data Base (RDMDB)

- RDMDB processes 44 types of data at present

(1) 40 types from RRTDB

GTS, NRTDB and other organizations, JMA products

(2) 4 types from other source

“vosnippon” ,"30s_TIDEST", "NOWPHAS" and "Tohoku Univ".

(3) Following new items are now available on RDMDB

“vosnippon”: Sea surface temperatures and salinities data from NPO “VOS Nippon” (the data provided by Asia and the Japan-Australia voluntary observation vessels)

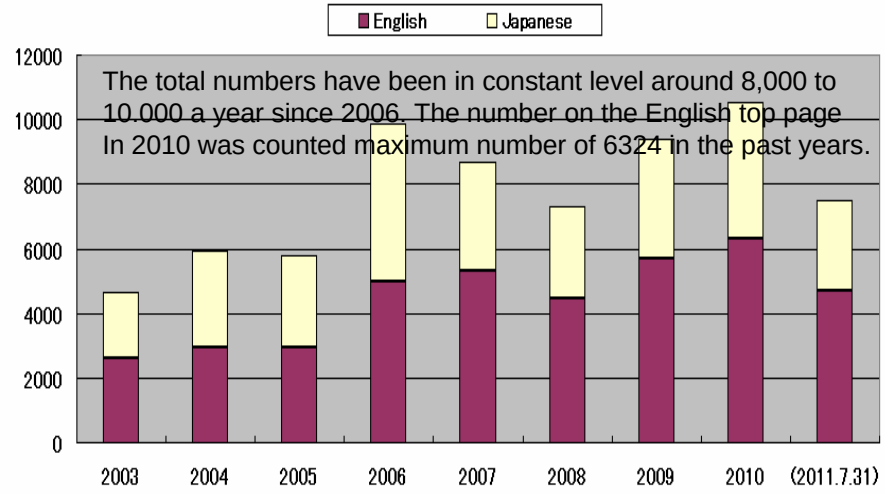
JMA’s products: JMA’s real-time products (1985-2009) are re-analyzed and replaced in March 2011.

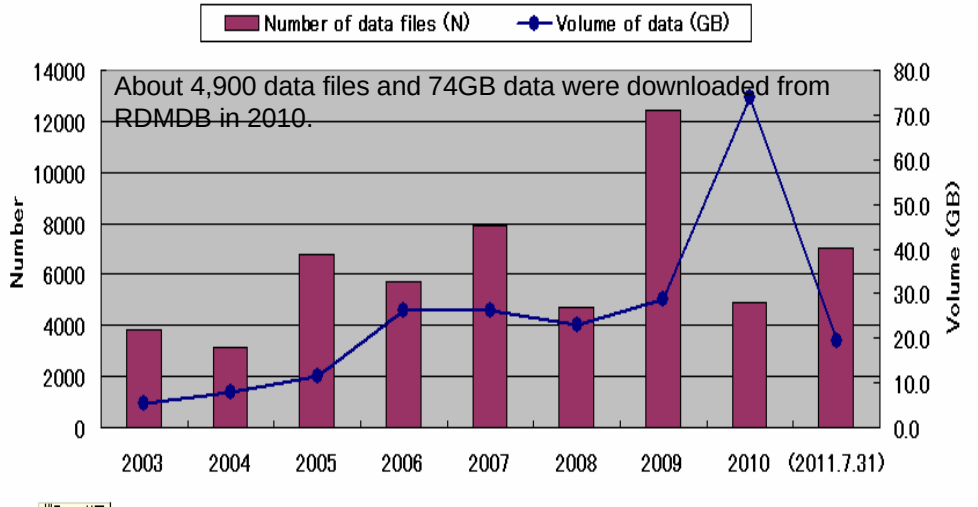
Feature of data file and volume of RDMDB

- The data volume of RDMDB was totally 125GB (as of the end of July 2011)

  Data volume has increased 60GB for the past 16 months.
  The total file size of “vosnippon” is about 800MB.

- Data files of large-volume in one month
  - MGDSST (911MB)
  - GLBTS (350MB)
  - Buoy_G (130MB)





The RTDB and DMDB in China

- The RT and DM data have operated by NMEFC and NMDIS of China, and have been increased and uploaded into the NEAR-GOOS website
- The website for China DMDB has been dramatically upgraded and updated (*http://near-goos.coi.gov.cn*) with a great amount of data uploaded, and data products and/or graphic products provided on the website.

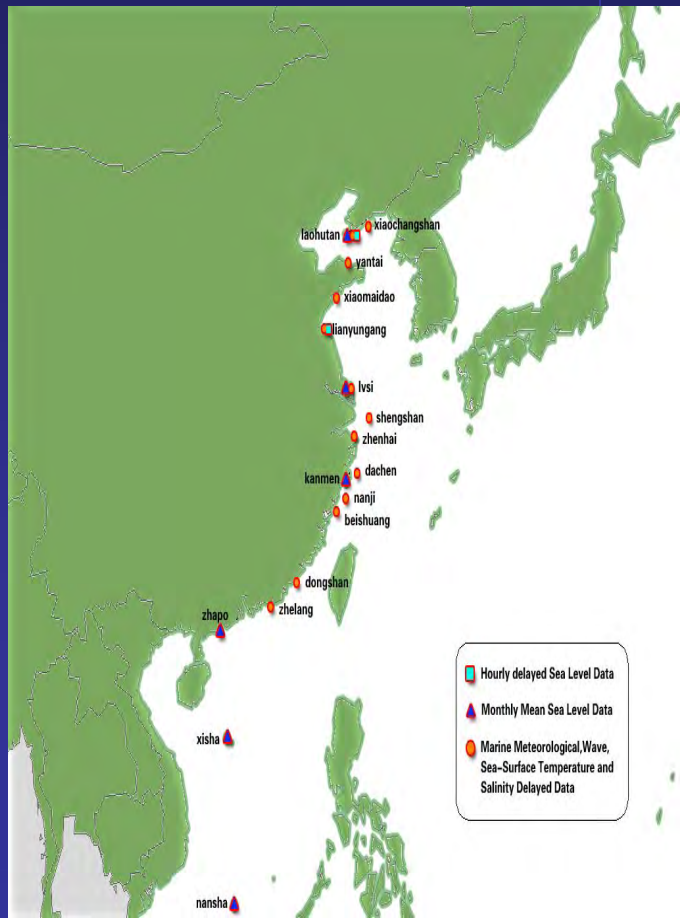
A. Monthly mean sea level data of Six Chinese coastal Stations

B. 13 Chinese Coastal stations real-time and delay mode meteorological, wave temperature and salinity data

C. Ship Data Wave and temperature data observed by 4 ships per day at NRT and DM

D. The various international programs/projects have also collected by NMDIS For example Argo, GTSPP GLOSS,JOMM/ODAS

E. Meanwhile, effort has been made in the development of data QC/QA techniques, and standard operating procedures for data collection, processing and management.



China NEAR-GOOS Delayed Mode Data Base

http://near-goos.coi.gov.cn

China Delayed Mode Database For NEAR-GOOS

Data Access

Operationally Updated Data

- ◇ Buoy Data (Korea) - **Quasi-Real time data** (*Data Access >>* *Data Format >>*)
- ◇ Coastal Station Data (China) - **Quasi-Real time data** (*Data Access >>* *Data Format >>*)
- ◇ Monthly Mean Sea Level Data (Chinese Station) - Delayed mode data (*Data Access >>* *Data Format >>*
- ◇ Temperature and Salinity Data (Chinese Station) - Delayed mode data (*Data Access >>* *Data Format >*
- ◇ Wave and Wind Data (Chinese Station) - Delayed mode data (*Data Access >>* *Data Format >>*)

North East Asia Regional GOOS

China Delayed Mode Database For NEAR-GOOS

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Access to Data & Services
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  - Monthly Mean Sea Level Data(China)
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- Forecast Services
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  - Regular Forecast(Wave, Sea Ice, El Nino)
  - Numerical Forecast (Wave, Sea Temerature, Sea Currents, Sea Ice)

Introduction of NEAR-GOOS

Overview of NEAR-GOOS

NEAR-GOOS is the North-East Asian Regional GOOS program. It is being implemented by China, Japan, the Republic of Korea and the Russian Federation as a WESTPAC project. It is intended to provide an operational demonstration of the usefulness of a regional ocean observing system in the achievement of its own specific goals and as a pilot project for other parts of the world.

NEAR-GOOS project covers the Yellow Sea, East-China Sea and Japan Sea.

The NEAR-GOOS Region

The Mission of NEAR-GOOS

The Mission of NEAR-GOOS in the 2nd Phase:
To develop a comprehensive and sustained ocean observing network in the regional seas and coastal regions specially focused on observations, monitoring and other activities that can not be easily implemented by countries acting independently. This network will embrace a wide range of data types and will be accompanied by pilot observing experiments, trials and demonstrations, training and useful products for use by the participating members and as a contribution to the GOOS and other global observing initiatives.
(from the NEAR-GOOS Presentation at the GRF-IV November 2008)

The Objectives of NEAR-GOOS

In accordance with the overall mission, four major objectives will define the actions and tasks for its Second Phase:

- Restructuring to provide a more comprehensive and flexible and expandable operational capability
- Enhancing and consolidating the Database Networks established in phase I
- Defining, planning and implementing NEAR - GOOS Pilot Projects and Experiments
- Developing outreach programs directed towards awareness raising, stakeholder recruitment (including more national agencies and participating experts), training and capacity building.
  (from the NEAR-GOOS Presentation at the GRF-IV November 2008)

About CDMDB

China Delayed Mode Database for NEAR-GOOS (CDMDB) is operated by National Marine Data and Information Service of China (NMDIS). CDMDB service provides oceanographic data and information product (Buoy data, Ship reports, GTS data, Meteorological data, SST and salinity data, wind and wave data, and so on), free of charge, to all the NEAR-GOOS users through Internet.

Related Services in NMDIS

- National Marine Data and Information service
- China Oceanic Information Network (www.coi.gov.cn)
- Ocean Data and Information Network for the Western Pacific Region (ODINWESTPAC)
- ODAS Metadata Service
- China Argo Data and Information Service
- GTSPP Data Center of China (中国GTSPP资料中心)

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Management of China Delayed Mode Database for NEAR-GOOS (CDMDB)

- **Principles for establishment of China Delayed Mode Data Base (CDMDB) for NEAR-GOOS**

As a regional pilot project of the Global Ocean Observing System (GOOS), the North-East Asian Regional GOOS (NEAR-GOOS) is being implemented by China, Japan, the Republic of Korea and the Russian Federation. NEAR-GOOS aims to full use of the oceanographic data in the North-East Asian region, and to provide data and data products for the regional disaster mitigation and prevention, integrated marine management, marine environmental forecasting, scientific researches and marine resource development. China is a major participating country in NEAR-GOOS. Chinese oceanographic data and information play a very important role in the marine research and development in this region. The following principles have been adopted to establish the NEAR-GOOS CDMDB:

- Gathering extensively the oceanographic data and data products related to the NEAR-GOOS
- Providing oceanographic data and information product, free of charge, to all the NEAR-GOOS users through Internet
- Encouraging the users of the NEAR-GOOS to contribute by all means their own data and information to set up the exchange and sharing mechanism for oceanographic data and information
- Developing new data products according to NEAR-GOOS service objective and in accordance with the characteristics of delayed data
- Considering the linking with GOOS system and contribution to the implementation of GOOS project

- **CDMDB service mode**

The CDMDB is accessible to all users who are interested in obtaining or providing data. Users from all the countries in the world are welcomed to use CDMDB and to conduct data exchange and sharing. All the users who are willing to obtain data from and contribute data to the databases are able to access the CDMDB through Internet. Registration is required to ensure the security of the database, maintain the effective utilization and to properly manage the database. Only the registered users can access to CDMDB and download the datasets. Now registration is open online. Users can get data with registered user's name through registration system.

- **CDMDB management and operating mechanism**

The National Marine Data and Information Service (NMDIS) takes responsibilities for the maintenance and management of CDMDB, including data collection and quality control, data loading, data transferring from RTDB to DMDB, development of data products, monitoring the uses of the databases and further development of database management techniques, etc..
The data stored at CDMDB will be updated once every month. The NEAR-GOOS working group at NMDIS is responsible for data updating and periodically submitting reports on the uses of the databases, and proposing suggestions on the further development of the databases to the SOA, IOC, and the NEAR-GOOS Coordinating Committee.

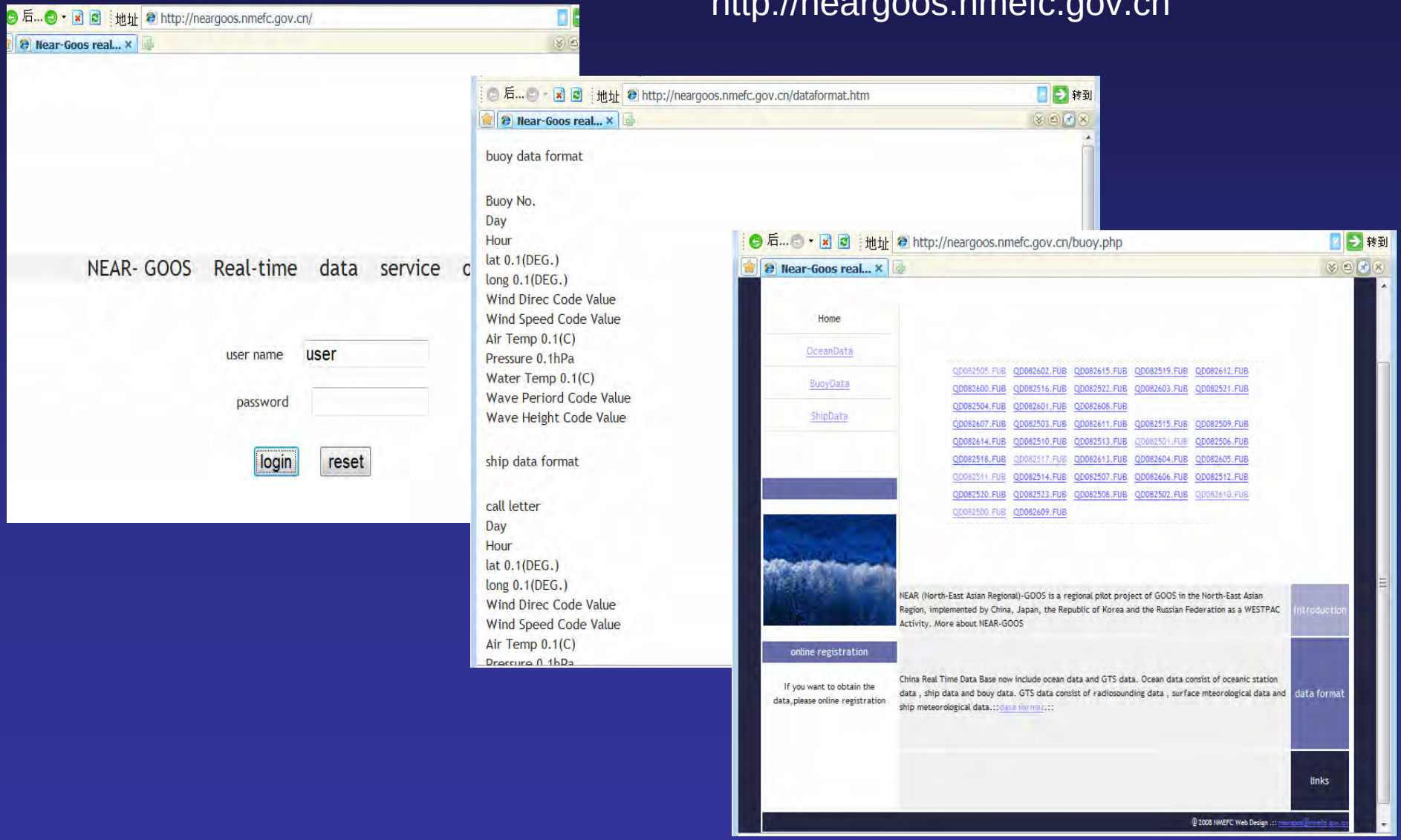
- **Types of products and data**

The following five types of data are available in the CDMDB at present:

Xiao chang shan	199912	21	6	39.2	122.7	70.0	-5.2	30.0	8.0	1033.9	-99.9	3.5	-99.9	-99.9
Xiao chang shan	199912	22	0	39.2	122.7	80.0	-4.3	30.0	8.0	1031.0	-99.9	3.0	-99.9	-99.9
Xiao chang shan	199912	22	6	39.2	122.7	75.0	0.3	30.0	5.0	1028.2	-99.9	3.2	-99.9	-99.9
Xiao chang shan	199912	22	12	39.2	122.7	80.0	-1.3	33.0	3.0	1027.3	-99.9	3.4	-99.9	-99.9
Xiao chang shan	199912	23	0	39.2	122.7	60.0	2.2	26.0	5.0	1022.6	-99.9	3.2	-99.9	-99.9
Xiao chang shan	199912	23	6	39.2	122.7	60.0	4.3	24.0	4.0	1019.8	-99.9	3.6	-99.9	-99.9
Xiao chang shan	199912	23	12	39.2	122.7	60.0	1.8	26.0	4.0	1018.5	-99.9	3.9	-99.9	-99.9
Xiao chang shan	199912	24	0	39.2	122.7	60.0	-1.1	30.0	9.0	1015.9	-99.9	3.8	-99.9	-99.9
Xiao chang shan	199912	25	0	39.2	122.7	80.0	-7.0	33.0	11.0	1025.4	-99.9	4.0	-99.9	-99.9
Xiao chang shan	199912	25	6	39.2	122.7	80.0	-3.4	34.0	6.0	1025.5	-99.9	4.1	-99.9	-99.9
Xiao chang shan	199912	25	12	39.2	122.7	57.0	-5.0	34.0	5.0	1027.5	-99.9	4.2	-99.9	-99.9
Xiao chang shan	199912	26	0	39.2	122.7	58.0	-3.8	34.0	3.0	1027.9	-99.9	3.8	-99.9	-99.9
Xiao chang shan	199912	26	6	39.2	122.7	80.0	5.3	17.0	4.0	1026.5	-99.9	4.0	-99.9	-99.9
Xiao chang shan	199912	27	0	39.2	122.7	30.0	5.4	21.0	7.0	1024.8	-99.9	4.6	-99.9	-99.9
Xiao chang shan	199912	27	6	39.2	122.7	30.0	6.5	24.0	5.0	1022.9	-99.9	4.6	-99.9	-99.9
Xiao chang shan	199912	27	12	39.2	122.7	40.0	3.8	30.0	2.0	1023.3	-99.9	4.6	-99.9	-99.9
Xiao chang shan	199912	28	0	39.2	122.7	60.0	-1.4	30.0	5.0	1026.5	-99.9	4.2	-99.9	-99.9
Xiao chang shan	199912	28	6	39.2	122.7	70.0	2.4	30.0	7.0	1025.2	-99.9	4.6	-99.9	-99.9
Xiao chang shan	199912	28	12	39.2	122.7	70.0	0.9	35.0	3.0	1026.9	-99.9	4.4	-99.9	-99.9
Xiao chang shan	199912	29	0	39.2	122.7	60.0	1.5	19.0	3.0	1021.0	-99.9	4.4	-99.9	-99.9
Xiao chang shan	199912	29	6	39.2	122.7	60.0	6.2	10.0	8.0	1018.2	-99.9	4.6	-99.9	-99.9
Xiao chang shan	199912	30	0	39.2	122.7	56.0	1.2	5.0	7.0	1021.4	-99.9	4.6	-99.9	-99.9
Xiao chang shan	199912	30	6	39.2	122.7	65.0	2.4	5.0	8.0	1021.4	-99.9	4.8	-99.9	-99.9
Xiao chang shan	199912	30	12	39.2	122.7	70.0	1.8	5.0	7.0	1024.4	-99.9	4.0	-99.9	-99.9
Xiao chang shan	199912	31	0	39.2	122.7	80.0	0.0	6.0	4.0	1027.6	-99.9	4.0	-99.9	-99.9
Xiao chang shan	199912	31	6	39.2	122.7	70.0	3.5	7.0	6.0	1027.3	-99.9	4.4	-99.9	-99.9
Xiao chang shan	199912	31	12	39.2	122.7	70.0	2.8	8.0	4.0	1027.4	-99.9	4.3	-99.9	-99.9

China NEAR-GOOS Realtime Data Base

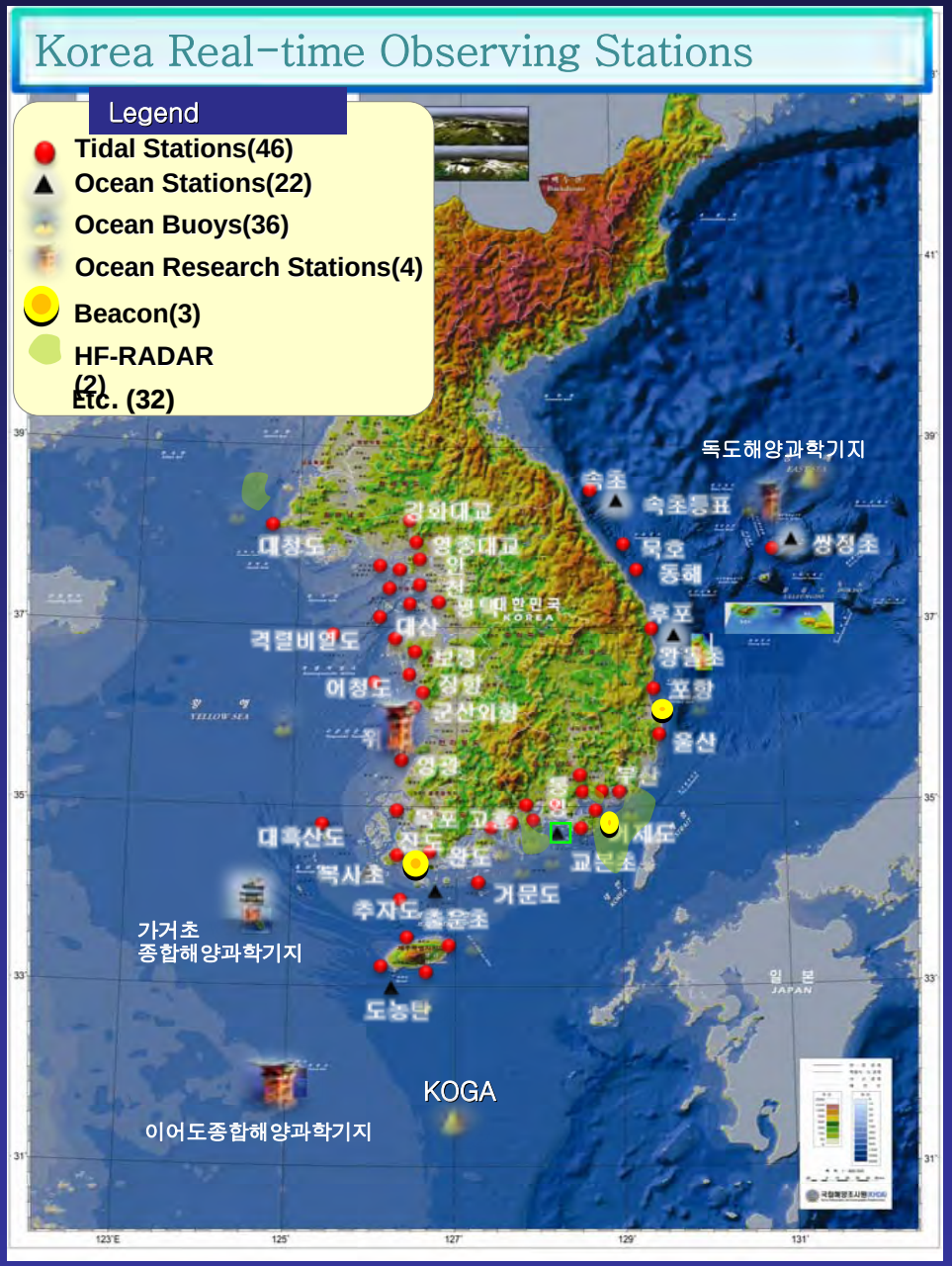
http://neargoos.nmefc.gov.cn



Korea NEAR-GOOS Real-time Database

- 145 real-time coastal/offshore observing stations has been operating by KORDI, KHOA, KMA and NFRDI with oceanographic and marine meteorological data observed and transmitted in real time.

KHOA has been establishing an integrated Korea National RTDB and the more data will become available to NEAR-GOOS when the new website becomes operational.



Korea NEAR-GOOS Delayed Mode Database

- KODC/NFRDI is in charge of the NEAR-GOOS National Delayed Mode Data Base management and services

- Available data and information are as follows;
  - Serial Oceanographic Data (1961-2011) bimonthly
    - List: Water temperature, Salinity, Dissolved Oxygen, Meteorological factors, Nutrients, Zooplankton biomass
  - Coastal Oceanographic Data (1923-2011) daily
    - List: Water temperature, Air temperature, Meteorological factors

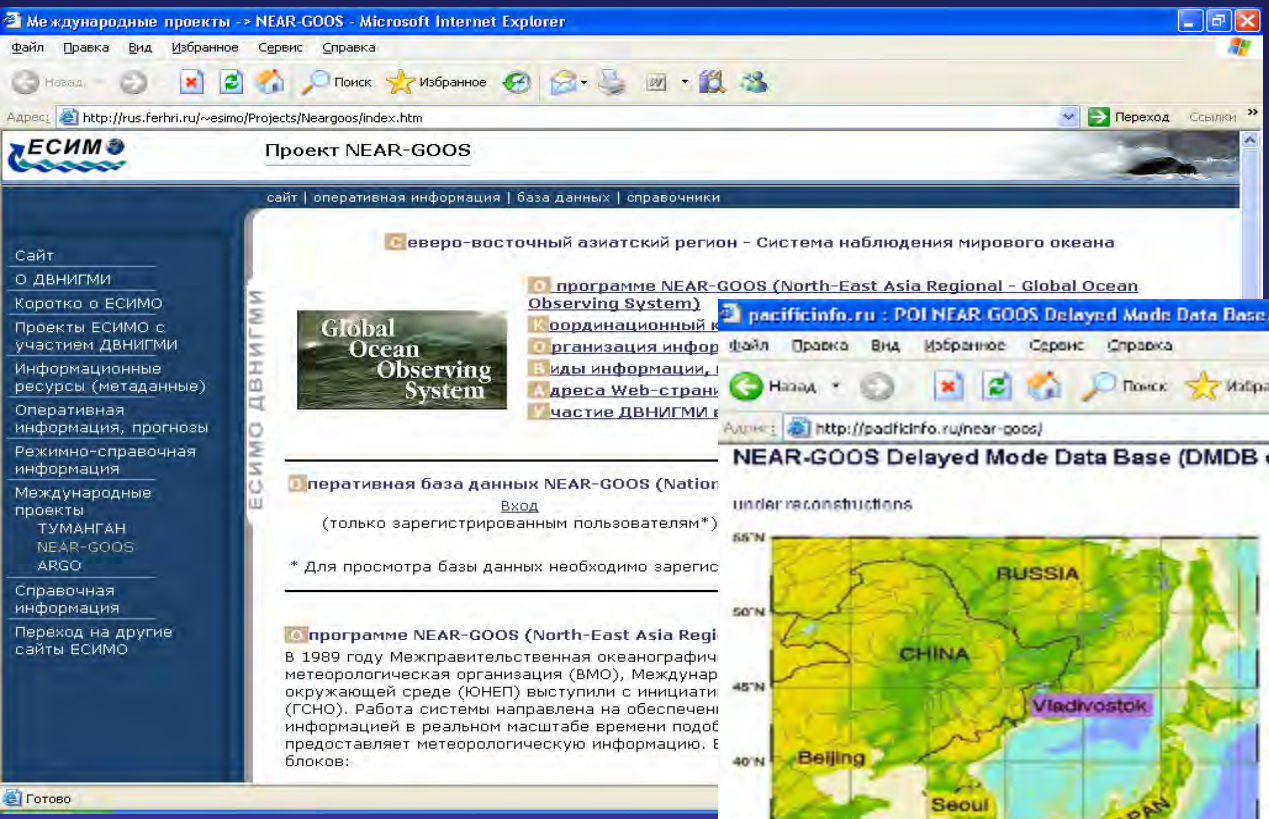
The RTDB and DMDB in Russia

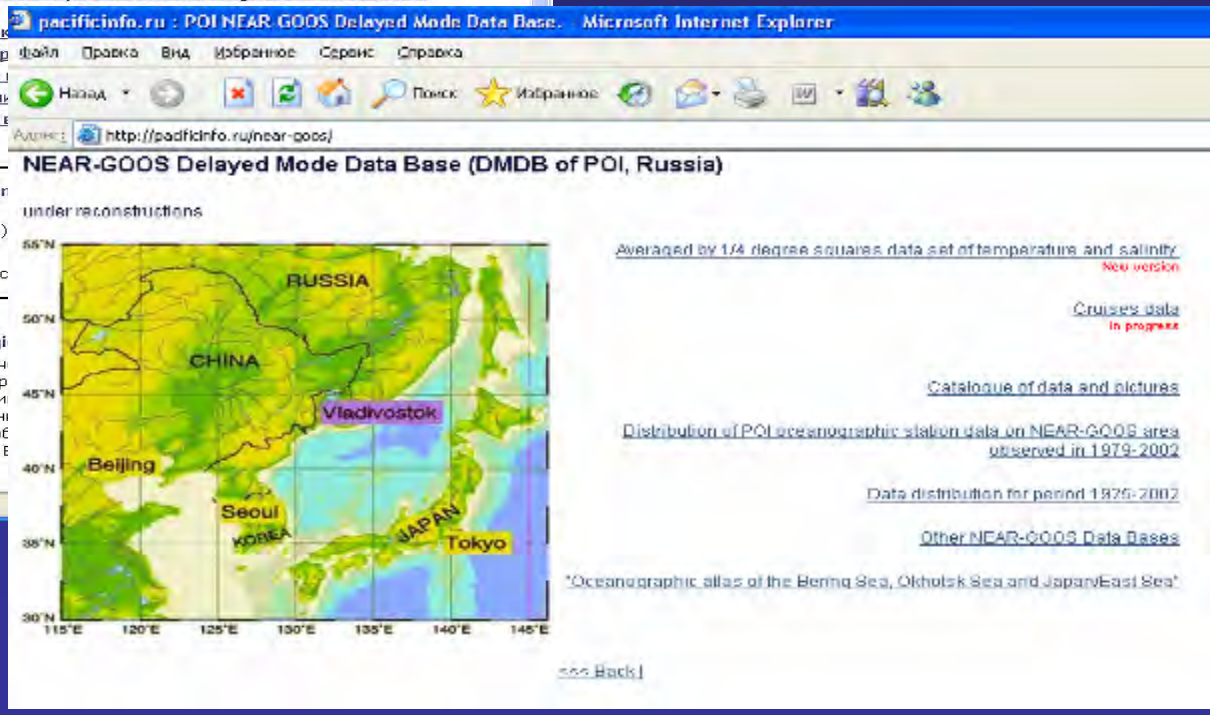
- NEAR-GOOS related activities have been continued in Russian. Far Eastern Regional Hydrometeorological Research Institute continued to maintain RTDB which includes operational data from 3 coastal stations and ship reports. The parameters include the T, S, waves, meteorological elements and others at http://public.feerc.obninsk.org/remac/kav/index.html.
- Pacific Oceanological Institute has been maintaining DMDB (*http://pacificinfo.ru/near-goos/*) which includes the data observed by national and foreign organizations in the NW Pacific including NEAR-GOOS Seas, and the data set of POI, FERHRI and TINRO marine expeditions
- The information on recent POI oceanographic cruise in the NEAR-GOOS area is located at *http://pacificinfo.ru/near-goos*.

NEAR-GOOS RTDB (FERHRI)

NEAR-GOOS DMDB (POI)

http://www.hydromet.com/project/near-goos/ -





http://pacificinfo.ru/near-goos/

Products

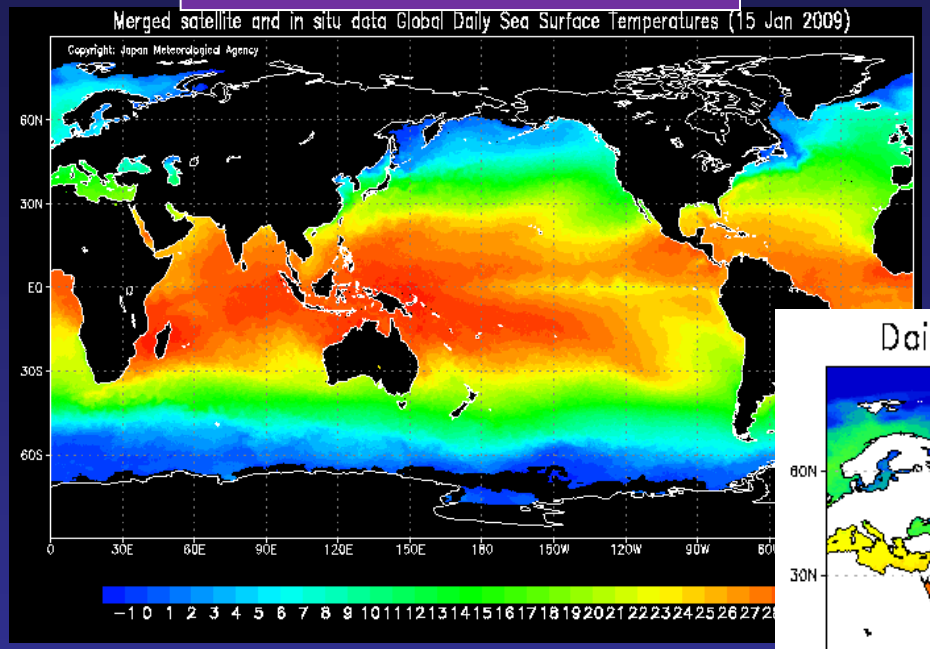
The new data products have been developed in the member states and have been provided the services to the users.

The data products have been developed in Japan

- The data products which outputs of JMA's has been operated in good condition.
- The reanalysis products for MGDSST and MOVE were introduced since March 2011 to the RRTDB and RDMDB for the period between 1985 and 2009..
- Additionally, updated JMA climate normals have been provided in the RRTDB. such as average SST, in May 2011, using observation data for 30 years from 1980 to 2010.
- MOVE/MRI.COM was updated in Mar 2011. Introduction of the thickness category in the sea ice mode which will be evaluated in 2011, and new reanalysis dataset will be introduced to the Data Base in the near future

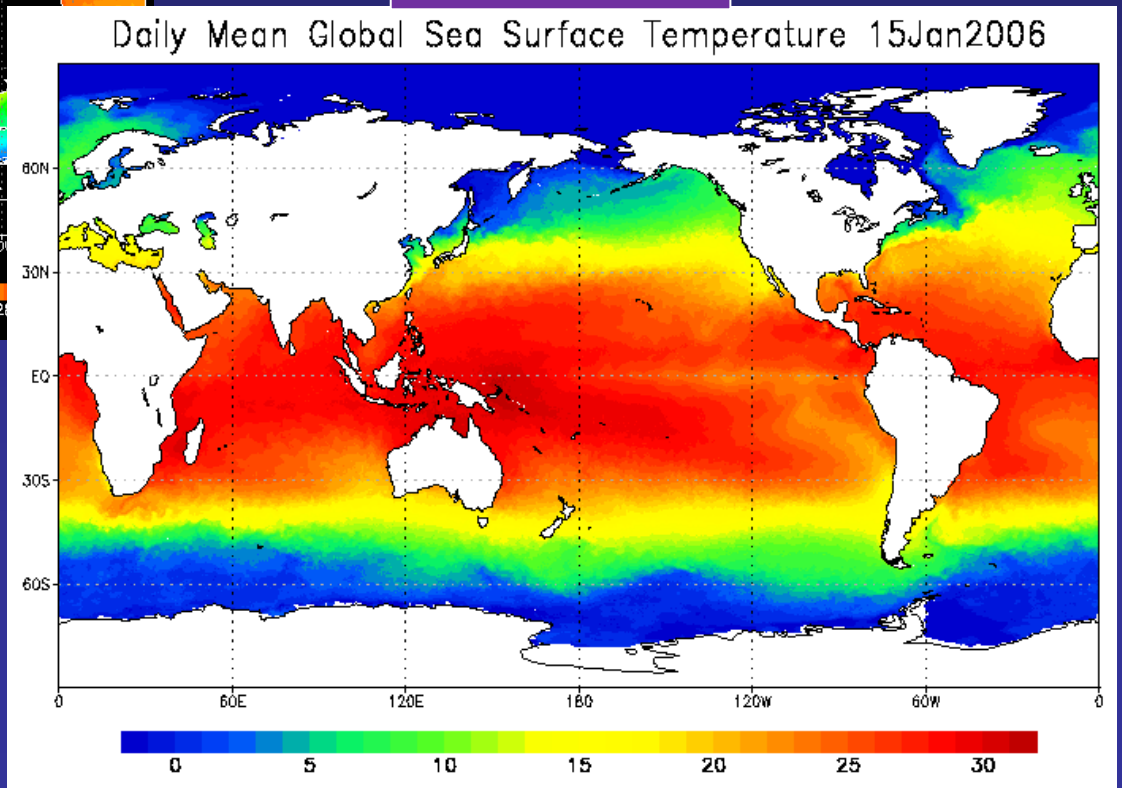
Reanalysis of MGDSST

REAL TIME ANALYSIS



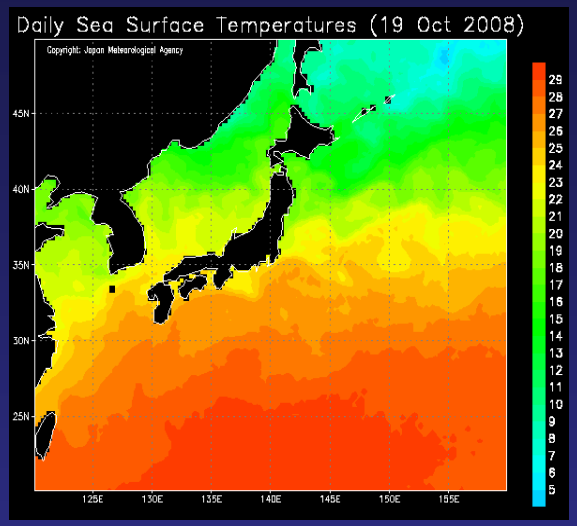
Sea surface temperatures under sea ice are estimated according to the statistical relation between sea ice concentration and SST.

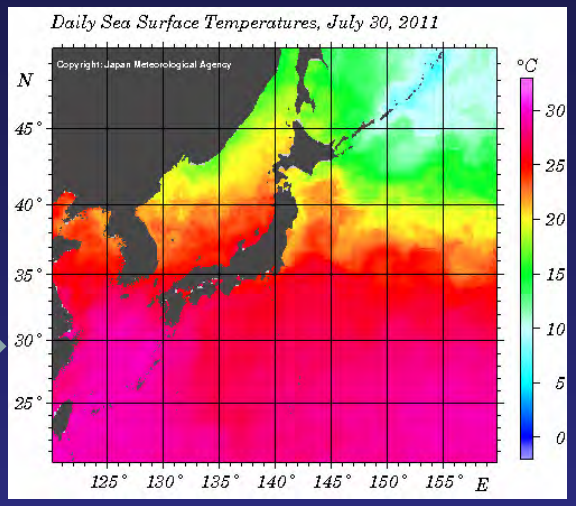
REANALYSIS

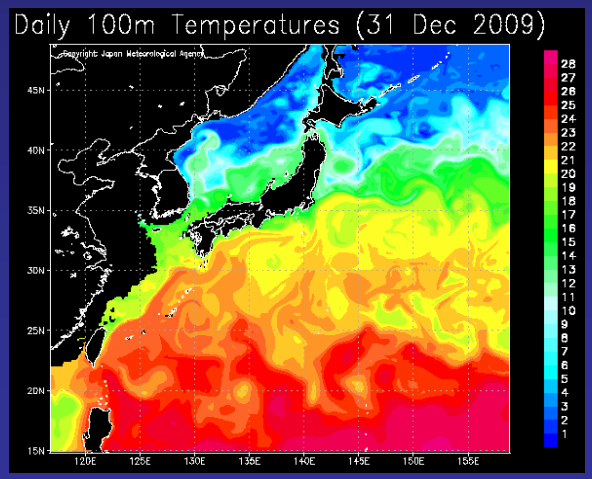


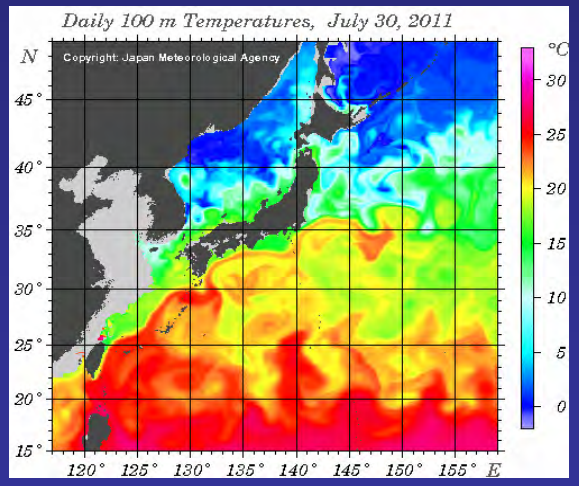
Reanalysis products are made in a few months, using available observations including quality controlled satellite data.

Product Pictures Modified





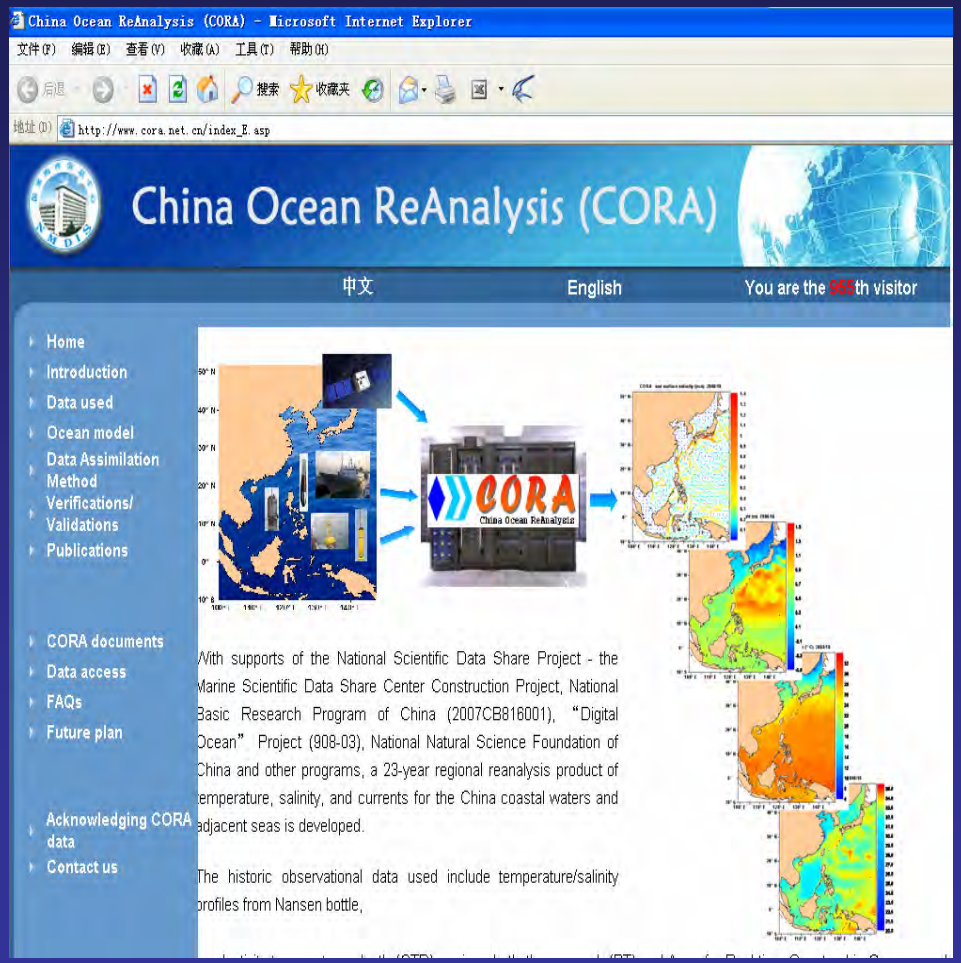


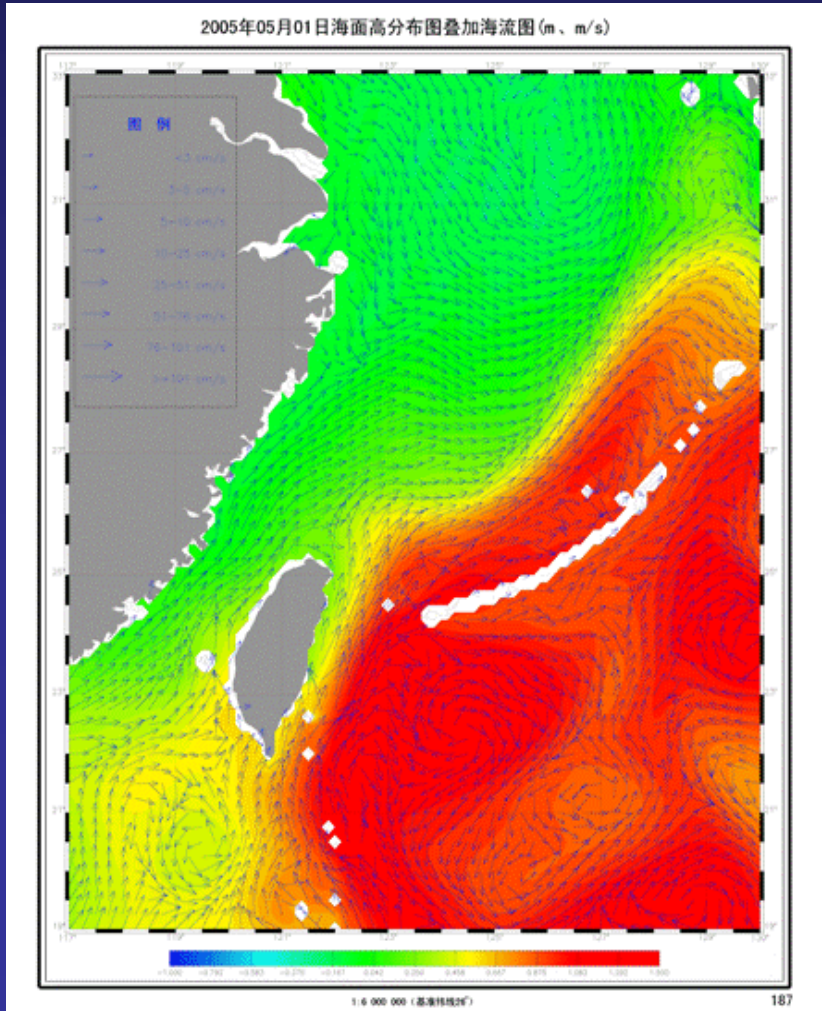


The data products have been developed in China

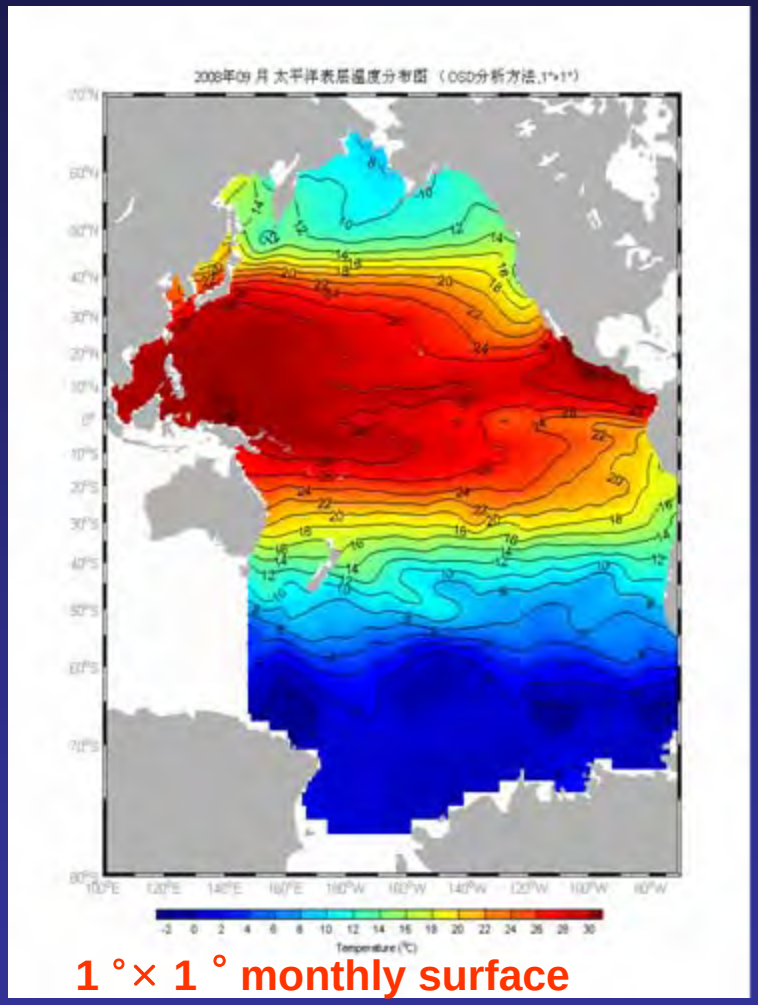
- A new reanalysis system has been developed by the NMDIS of China for the China coastal waters and adjacent seas to produce a dataset called China Ocean Reanalysis (CORA).
- The model in use is the NMDIS parallel version of POMgcs, and which impacts of wave breaking and tidal mixing are considered.
- The data assimilation scheme is a sequential 3D-Var implemented within a multi-grid framework.
- The CORA dataset includes sea surface height, temperature, salinity and current in the area and starts from Jan. 1986 and is real-time updated yearly.

The CORA dataset can be downloaded freely from the web site: http://www.cora.net.cn





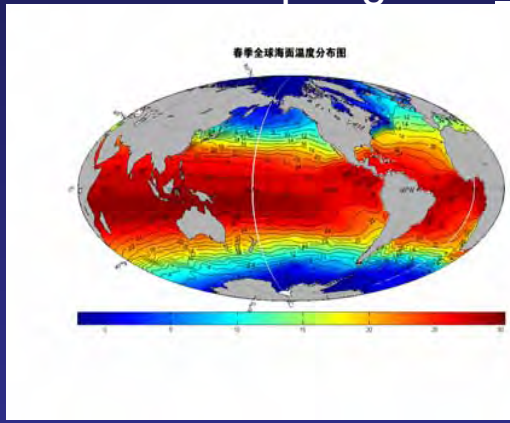
Relevant Products Developed and Updated



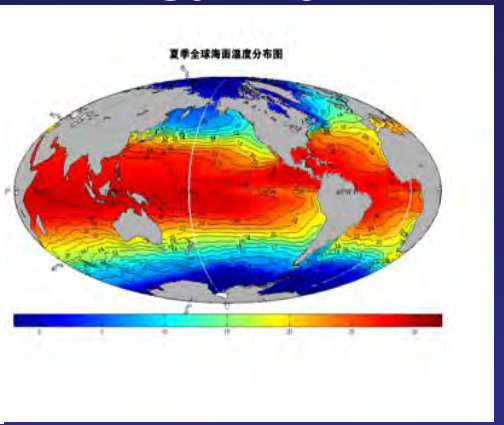
1 °× 1 ° monthly surface temperature statistic products in Pacific Ocean from Sep. 2008 to Sep. 2009

Global seasonal surface temperature distribution products

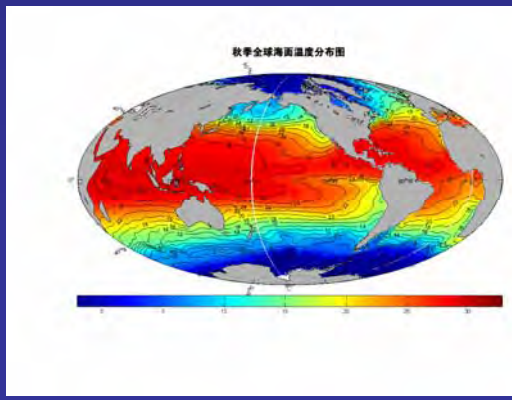
Spring



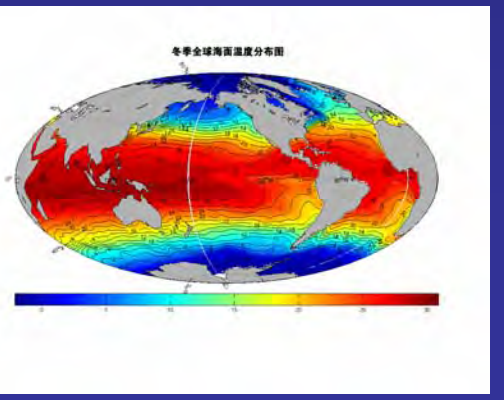
Summer



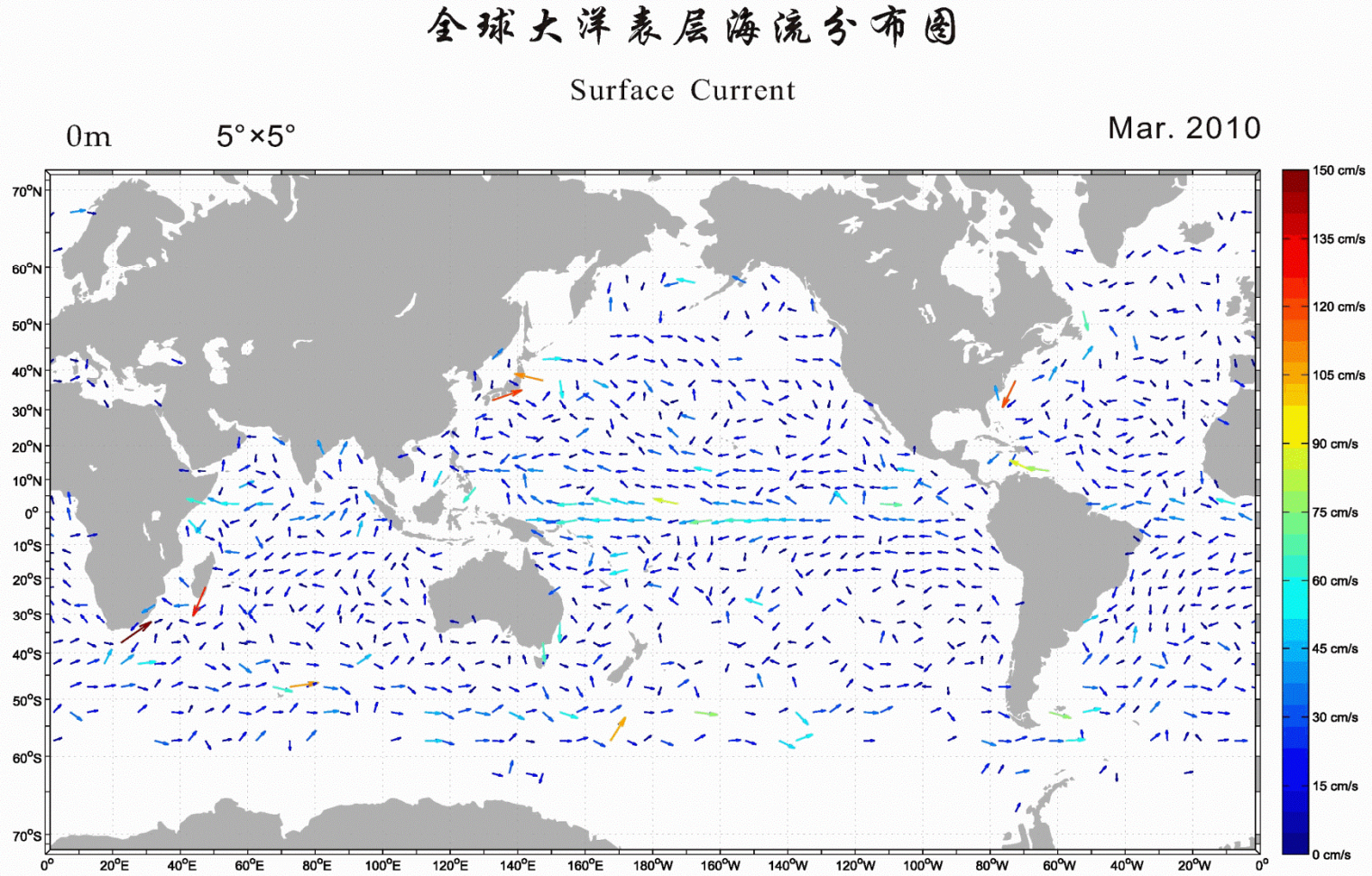
Autumn



Winter



Global ocean surface current distribution products derived by ARGO track data



Korea is establishing KOOS from 2009 to 2013 and will contribute to the NEAR-GOOS

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Tide station	8	19	24	26	29	35	37	38	40	40	Number of stations
Ocean stations			2	2	4	4	4	4	5	5	Number of stations
Moored buoys	5	5	5	5	6	7	9	12	14	14	Number of moorings
Coastal tower	4	6	12	15	16	17	19	19	20	20	Number of towers
Coastal pier	1	3	3	3	4	5	5	6	6	6	Number of piers
Radar(wave)	[1]	3	3	3	4	5	5	6	6	6	Number of stations
HF radar					1	2	2	2	2	2	Number of stations
Ferryboat						2	2	2	2	2	Number of lines
Total System	20	38	41	57	67	81	87	94	100	100	System % Complete

The data products has been developing by Korea and will be provided the services to the NEAR-GOOS

- KOOS will produce and provide nowcast and forecast information of ocean/ coastal environment for various maritime operations and a solution of pending problems to the governmental agencies, industrial circles and the public
- **The Core Variables of forecasted and the applications are as following:**

Basic variables	Applications
• Sea surface winds	• Storm surges
• Sea surface waves	• Search and Rescue
• Storm surges	• Oil spill
• Tides, tidal currents	• I-MAPS (Integrated-MAritime port Prediction System)
• 3D circulation (Regional/Local)	• Sediment transport
• Temperature, salinity	
• Suspended sediment conc.	

Cooperation for YOOS Development between China and Korea
「Yellow Sea/East China Sea Operational Oceanographic System」

MEMORANDUM OF UNDERSTANDING Between NMEFC and KORDI FOR COOPERATION ON MARINE ENVIRONMENT FORECASTING SYSTEM FOR THE YELLOW SEA AND EAST CHINA SEA

Objective

The Memorandum of Understanding (MOU) aims to promote research cooperation with a view to contributing to the advancement of scientific research and technological development in Marine Environment Forecasting System for the Yellow Sea and East China Sea.

Scope of Cooperation

Research cooperation between the Sides will be carried out in scope of mutual concern and on the basis of research programs executed by each Side.

Products of YOOS

Forecasting information on ocean/coastal environment

Forecasting ocean properties

- local sea surface wind
- local wave
- local storm surge
- tides
- 3D current
- wind driven current
- temperature
- salinity
- suspended sediment conc.

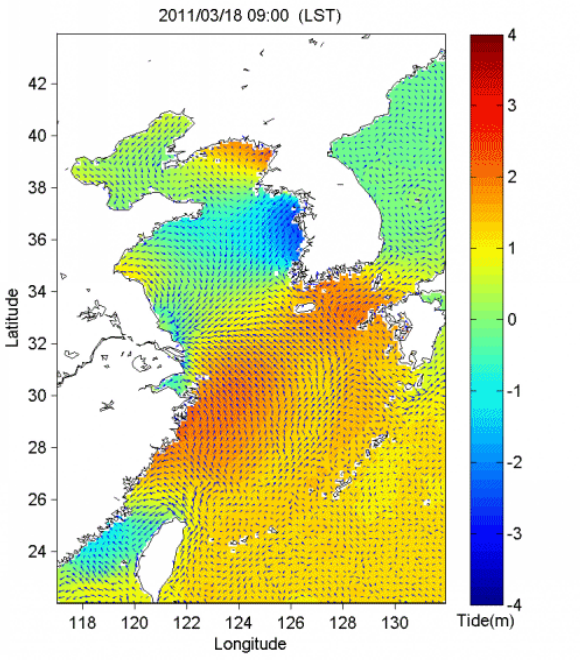
Applications

- Mitigation of coastal disaster
- Improvement of Maritime operation
- Sustaining use of ocean/coastal resources
- Protection/restoration of environment and ecosystem
- Oil spill
- SAR
- Ocean tourism/Leisure

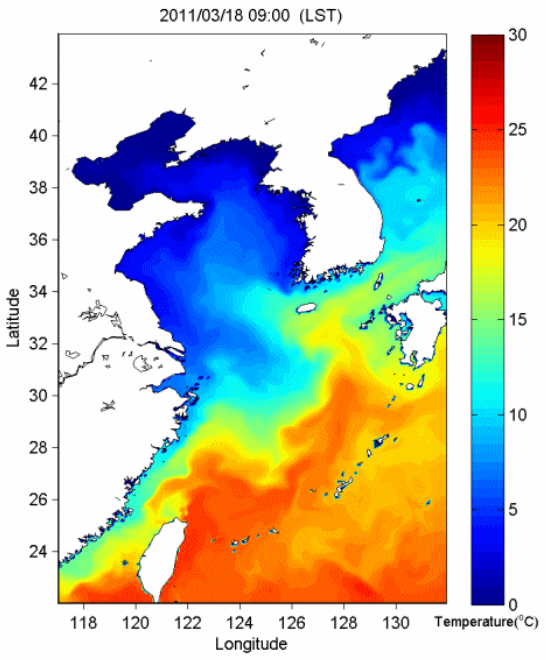
OPERATIONAL 3-D CIRCULATION FORECASTING SYSTEM(72 HRS)

MOHID using HYCOM

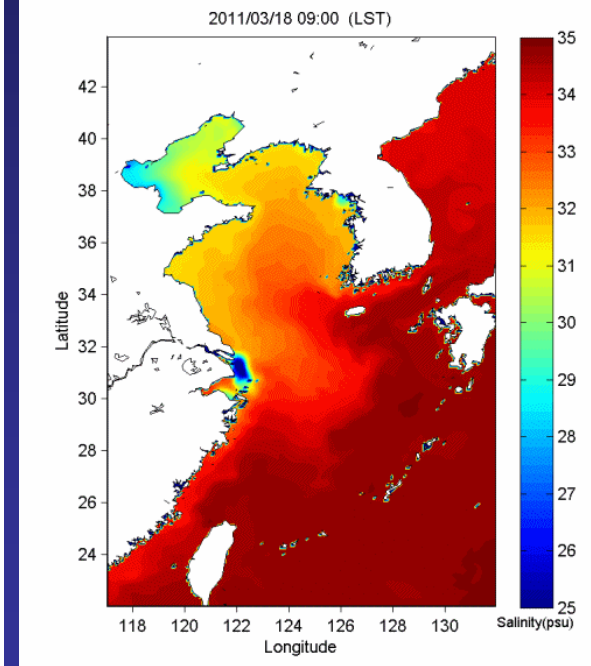
Current & Tide



Temperature



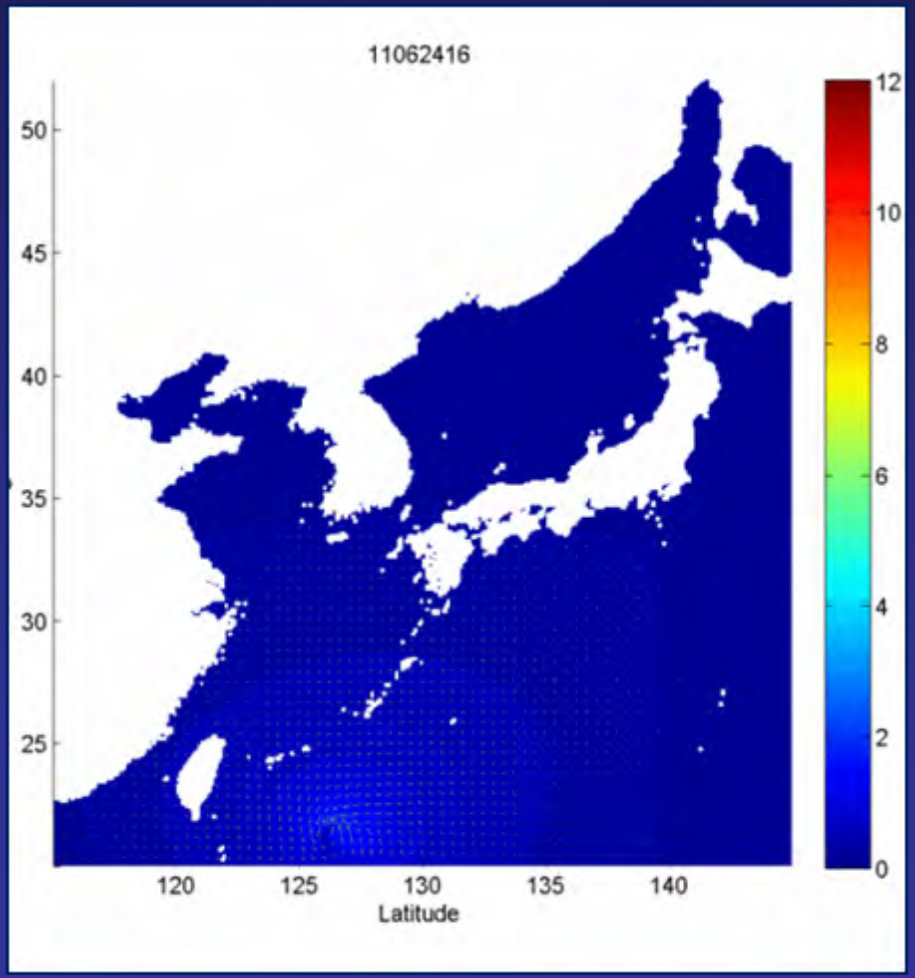
Salinity

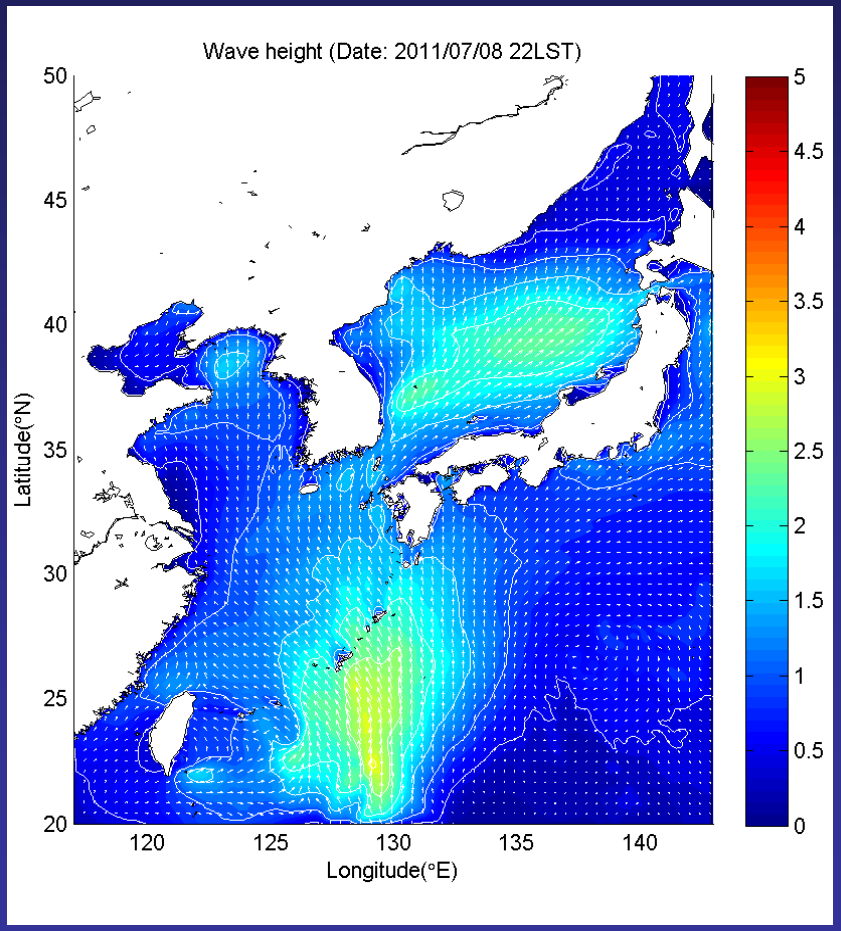


2011/03/18/09 ~ 2011/03/21/09 (LST)

WAVE FORECASTING SYSTEM

WAM

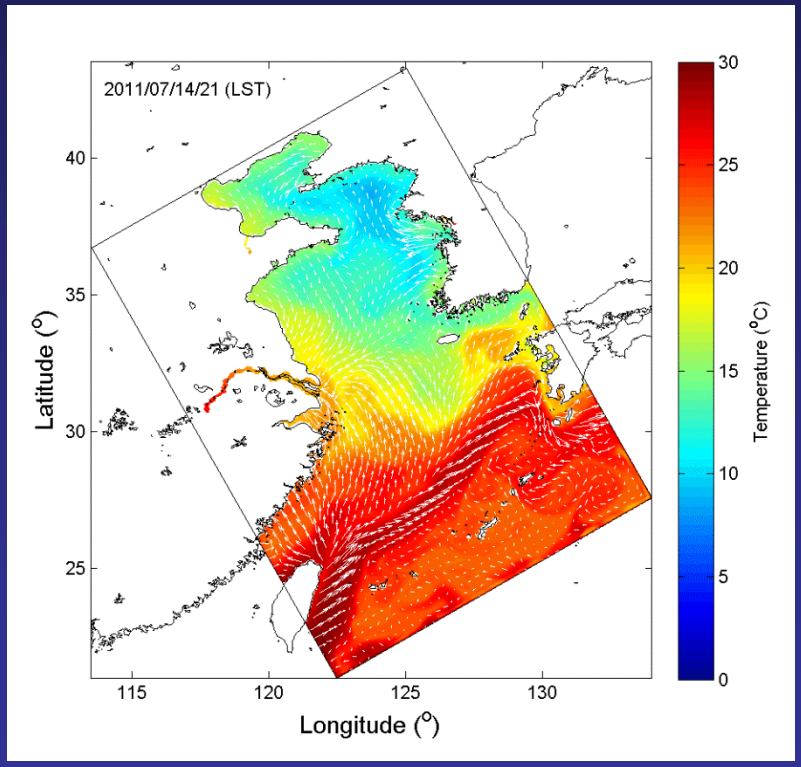


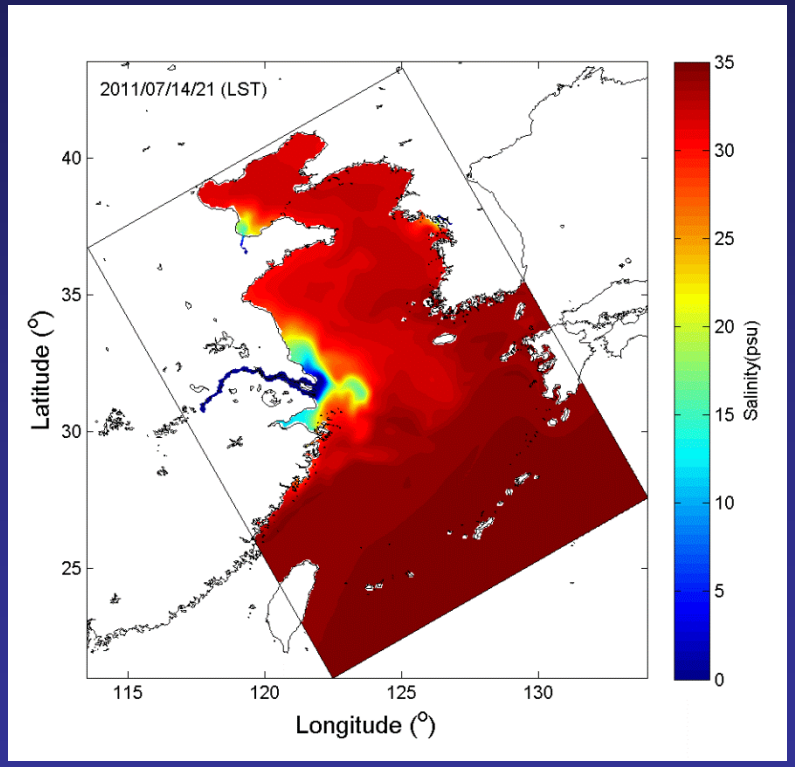


(Jul./08/2011 21:00h ~ Jul./11/2011 21:00h)

OPERATIONAL 3-D CIRCULATION FORECASTING SYSTEM(72 HRS)

ROMS SYSTEM (YELLOW SEA AND EAST CHINA SEA)





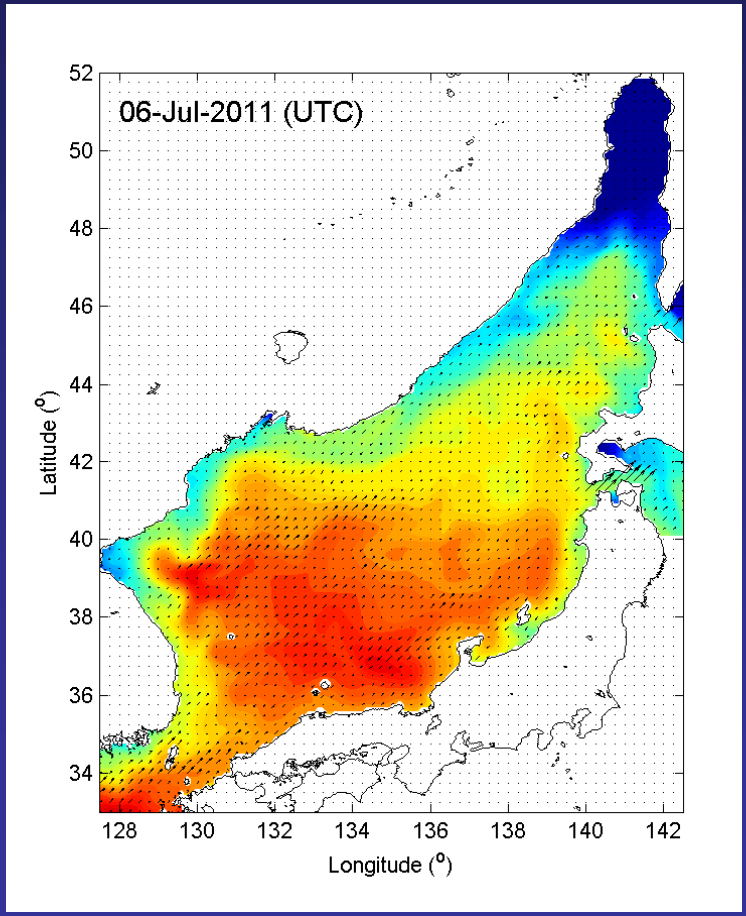
Results of current, temp. and salinity forecasting

OPERATIONAL 3D CIRCULATION FORECASTING SYSTEM

MOM3 SYSTEM (EAST SEA)

(45m Temp. and Current)

Forecasting once a week



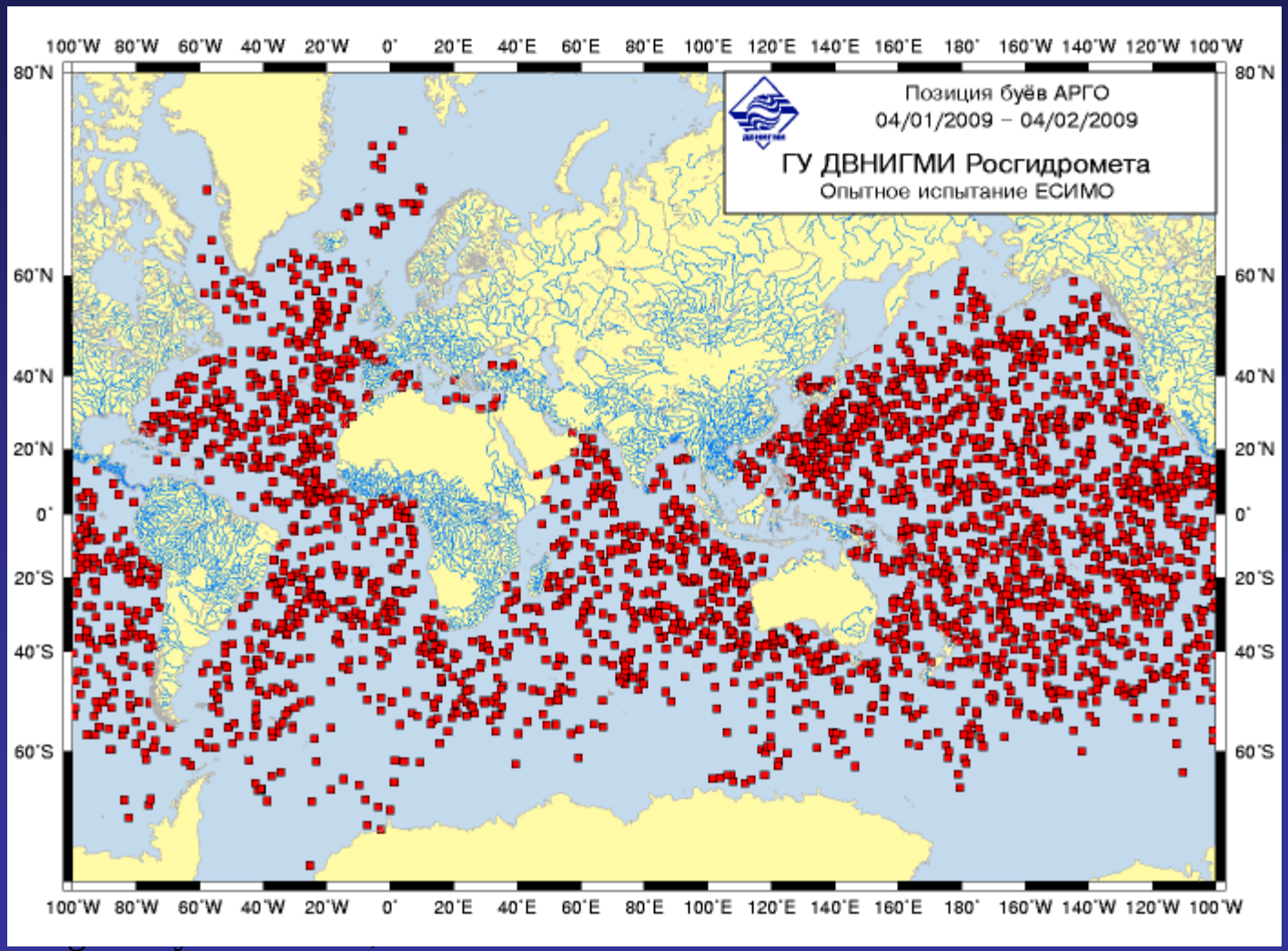
2011/07/06 ~ 2011/07/19

The data products in Russia

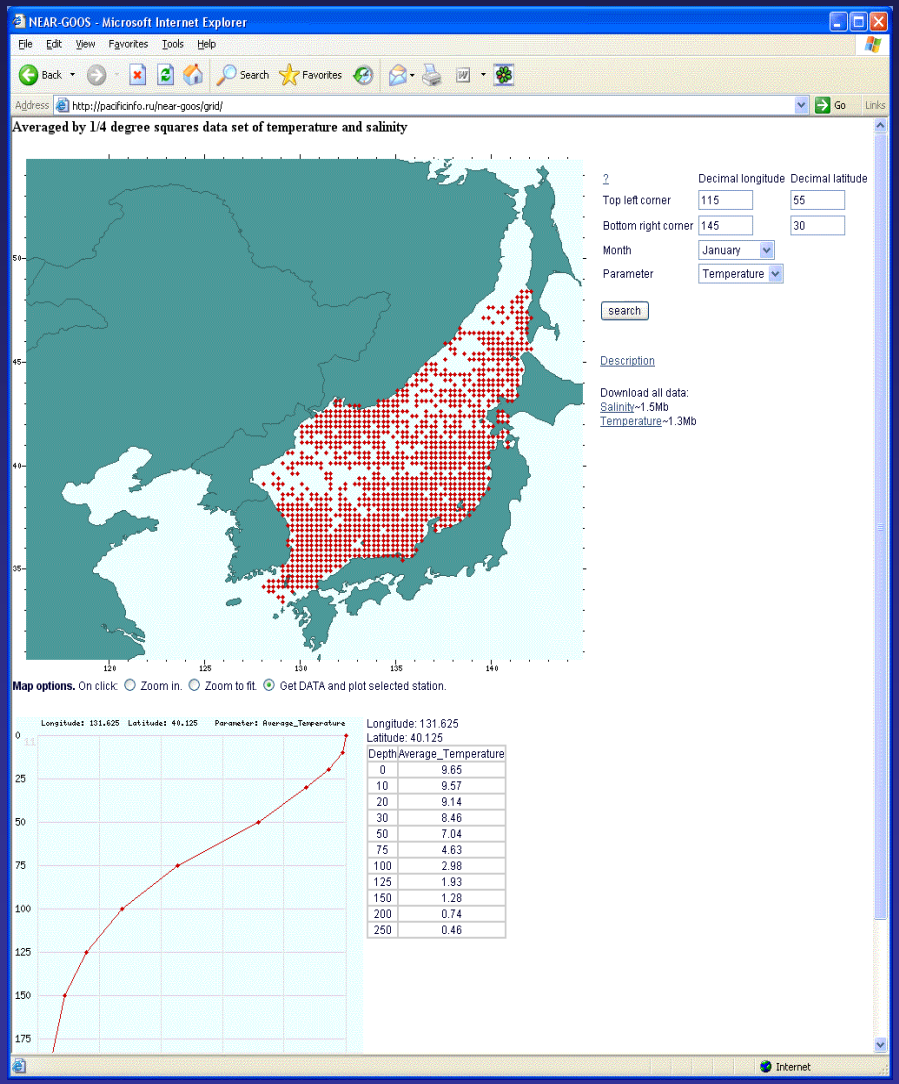
- Development the metadata of the cruise investigation data POI Such as POI R/Vs positions monitoring, Inventory of cruises with CHLOROPHYLL and suspended materials data observations
- The data has developed by POI in Russia as Gridded data products
- Several links has been recently established with the newly completed Russian Atlas Climate of the Seas (*http://data.oceaninfo. info/atlas/Jap/index.html*) and joint publication with NODC/US on Climatic Atlas of the North Pacific Marginal Seas (*http://www.nodc.noaa.gov/OC5/ PACIFIC2009/*)

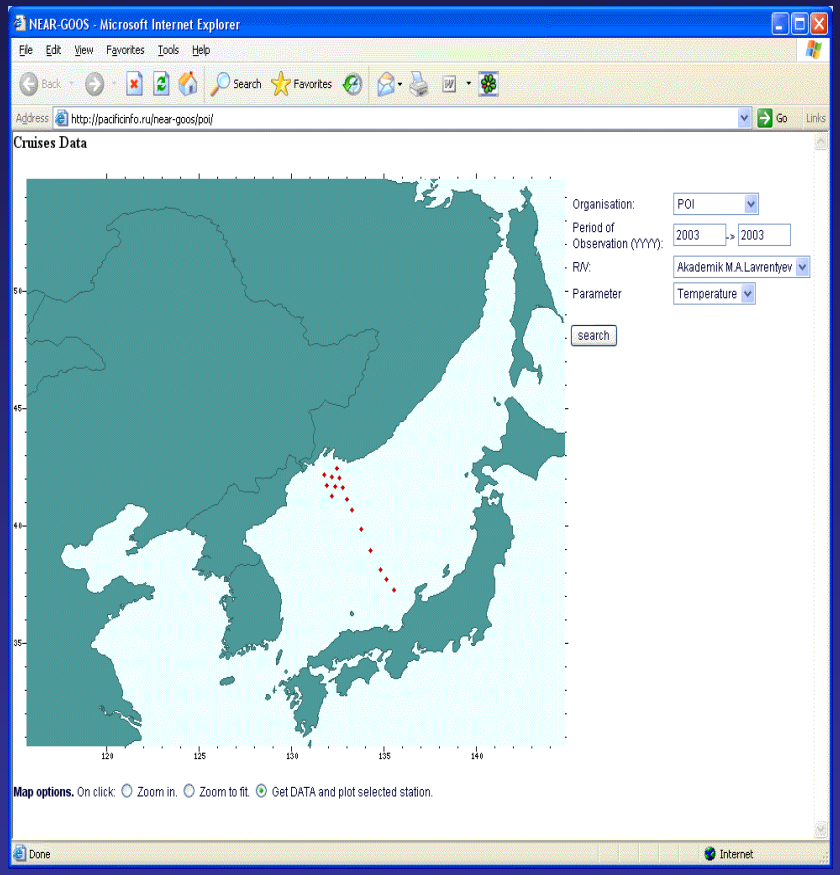
NEAR-GOOS RTDB (FERHRI)

Under developing ESIMO program a section for Argo buoys (http://rus.ferhri.ru/argoos) has been developed



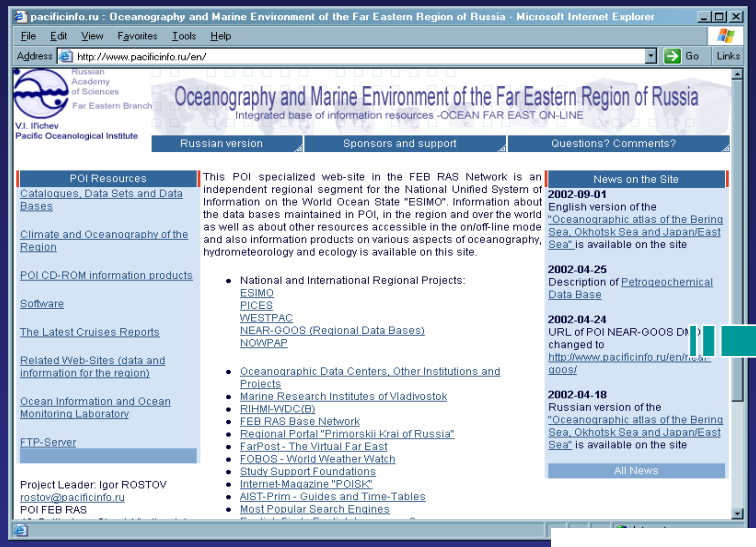
1. Gridded data access: Averaged by 1/4 degree squares data set of temperature and salinity

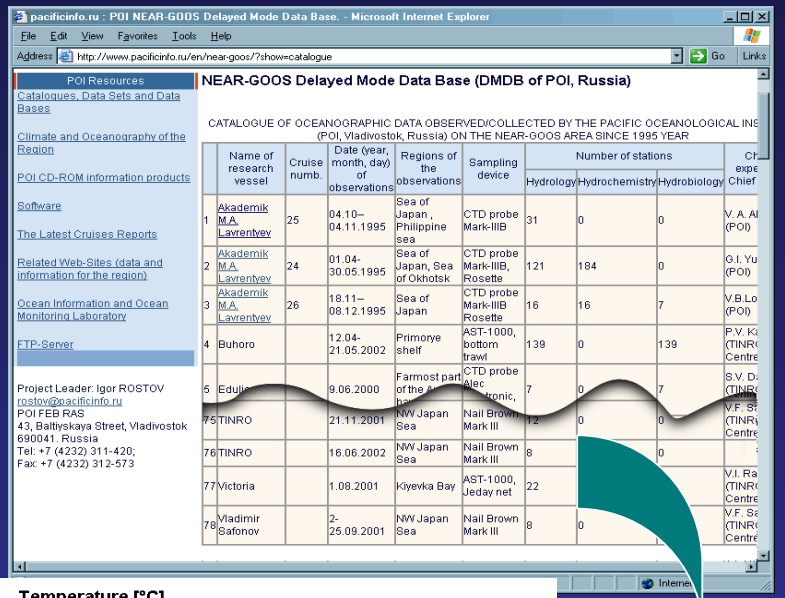


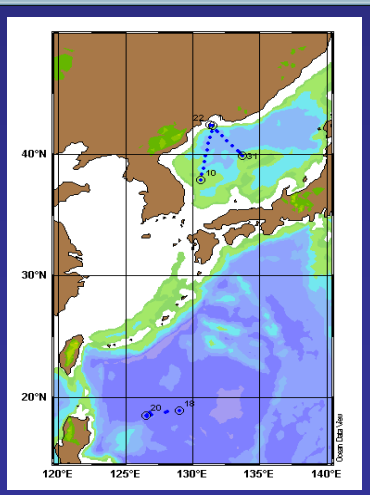


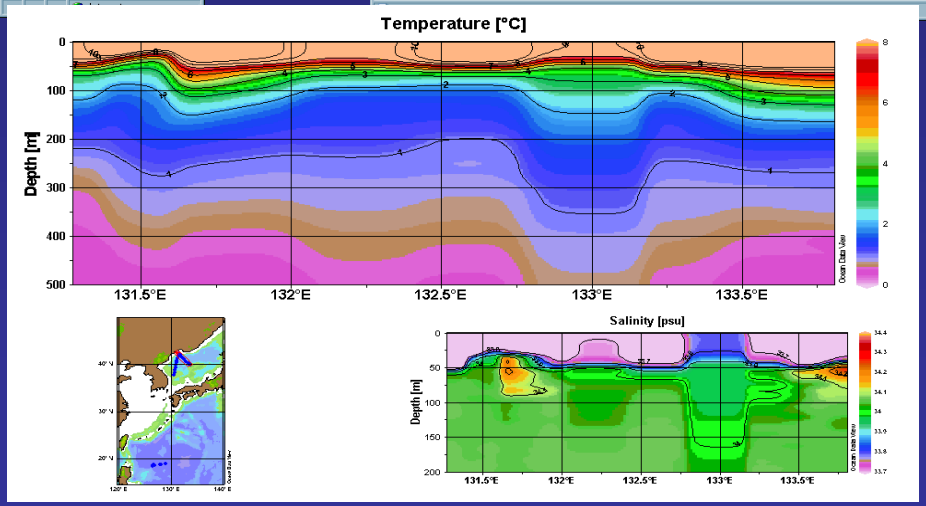
- **Providing access to the gridded dataset**
- **This option assumes using internal POI database**

2. Cruise Data/metadata

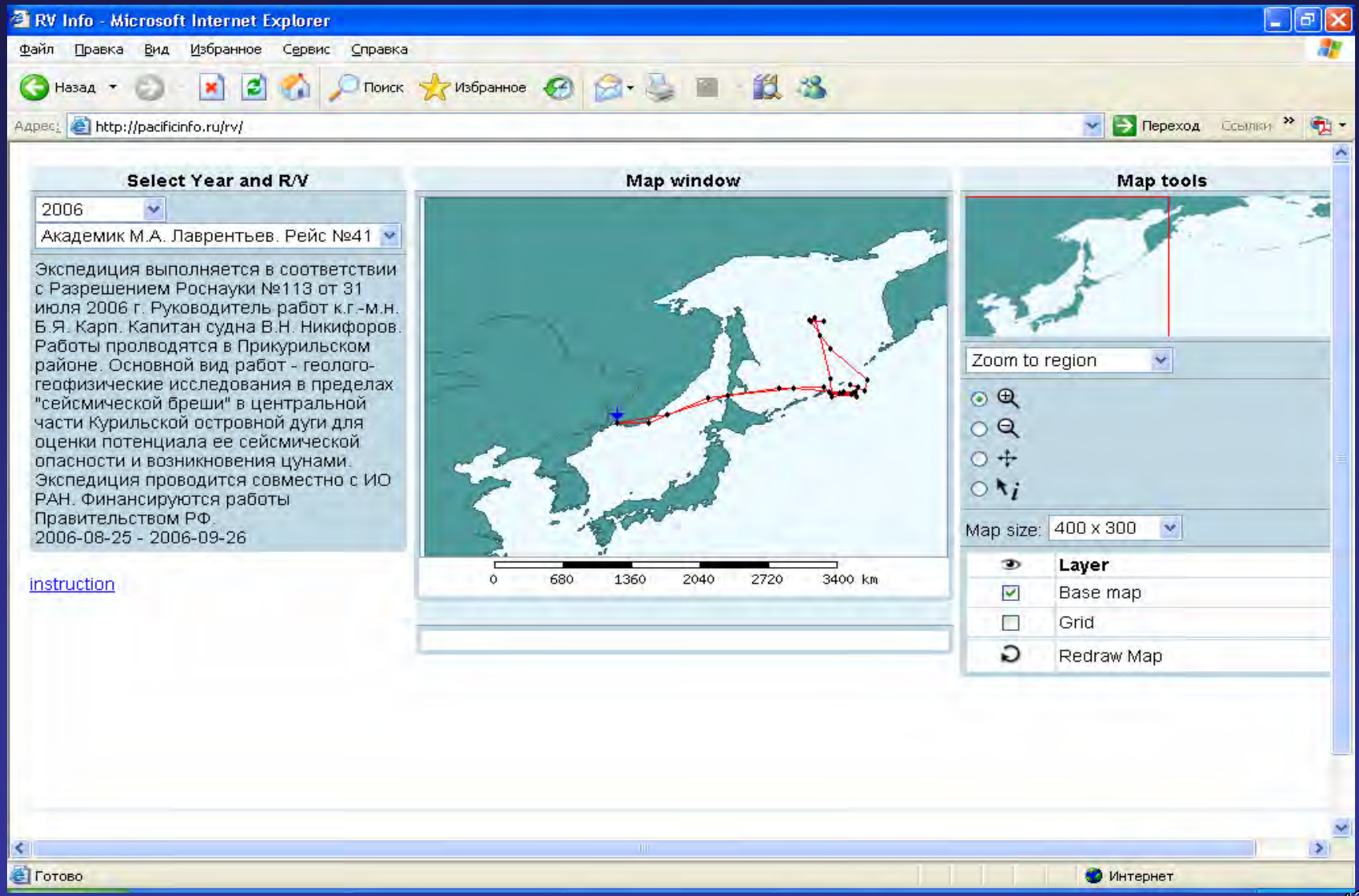








3. Current POI R/Vs position



4. Inventory of cruises with CHLOROPHYLL data observations

Inventory of cruise with CHLOROPHYLL data observation - Microsoft Internet Explorer

Файл Правка Вид Избранное Сервис Справка

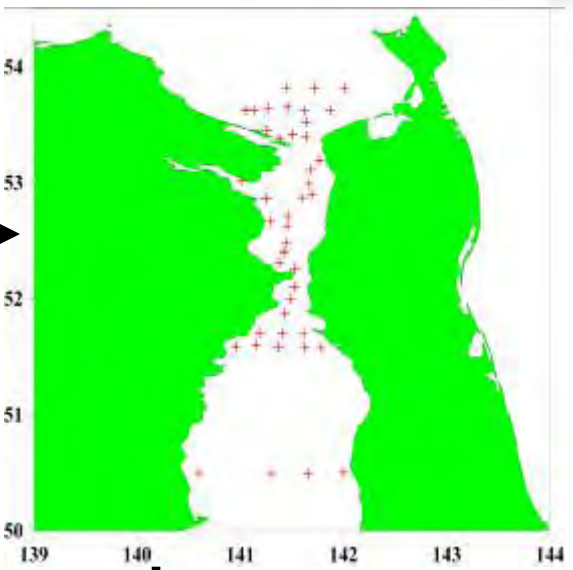
Назад Поиск Избранное

Адрес: http://pacificinfo.ru/near-goos/chloroph/ Переход Ссылки

Inventory of cruise with CHLOROPHYLL data observation

R/Vessel	Cruise No.	Date	Number of stations	Data
«Professor Gagarinskiy»	28	28.06.2000 -16.06.2000	21	GAG28_0
«Professor Gagarinskiy»	37	14.11.2003 - 23.11.2003	39	GAG37_0
«Professor Gagarinskiy»	44	06.06.2007 - 17.06.2007	57	GAG44_0
«Pavel Gordienko»	32	14.04.1999 - 23.04.1999	70	GOR32_0
«Professor Khromov»	36	22.07.1999 - 13.08.1999	29	HRO36_0
«Lugovoye»	03	21.11.1999 -03.12.1999	70	LUG03_0
«Lugovoye»	04	23.12.1999 -24.12.1999	25	LUG04_0
«Lugovoye»	05	04.03.2000 - 12.03.2000	57	LUG05_0
«Lugovoye»	06	30.03.2000 - 01.04.2000	38	LUG06_0
«Utes»	01	18.05.1999 - 15.06.1999	22	UTE01_0
Estuary Razdolnaya river	01	04.07.2001 - 25.07.2001	34	RAZ01_0
Estuary Razdolnaya river	05	02.08.2005 - 07.08.2005	53	RAZ05_0
			443	

Format data are in "csv" (comma separator value) tables
Sampling ***method:*** standard and non-standard bottees, Rosettes
Analytical method **- *spectrophotometric***

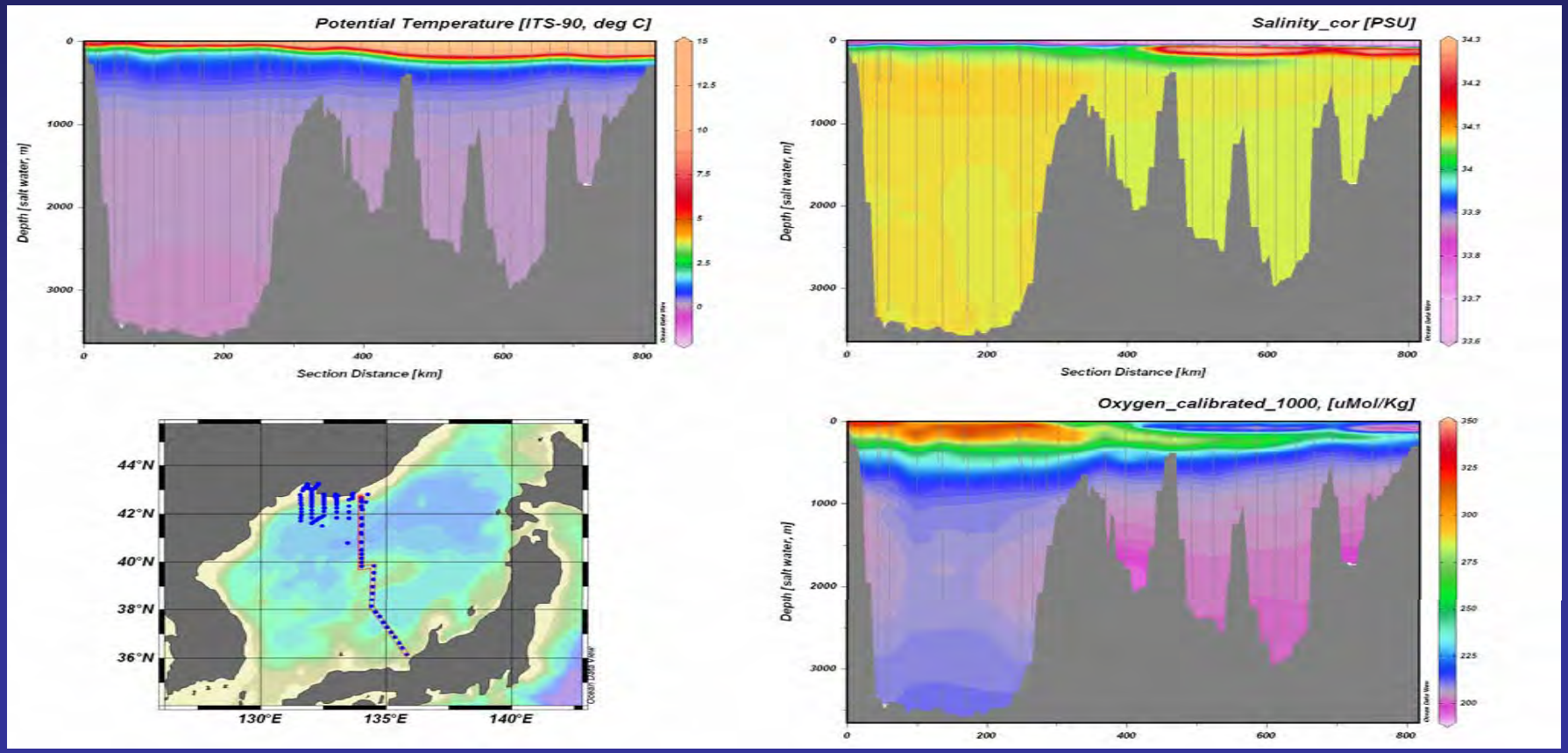


Data

Интернет

Development of Ocean Observing Network

- The CC-XIV Meeting has also decided to initiate the pilot project titled ”NEAR-GOOS Cross-basin Climate Monitoring Section ”. The first synchronized observations were implemented on November 3-6, 2011 by *r/v Akademik M.A.Lavrentyev* and *r/v Keifu-maru*

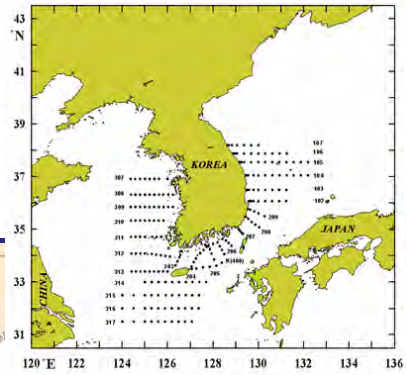


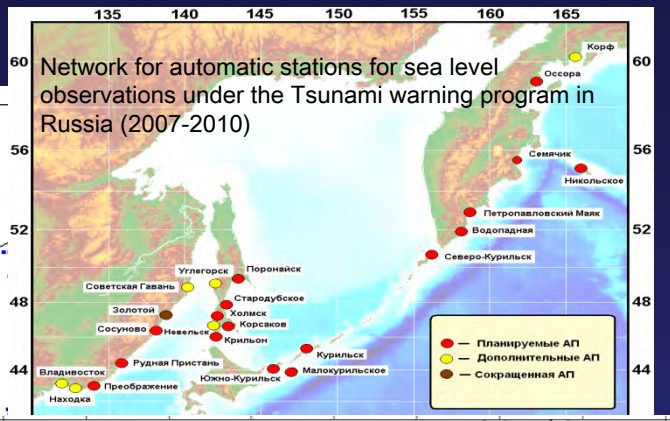
Ocean observations in the NEAR-GOOS region

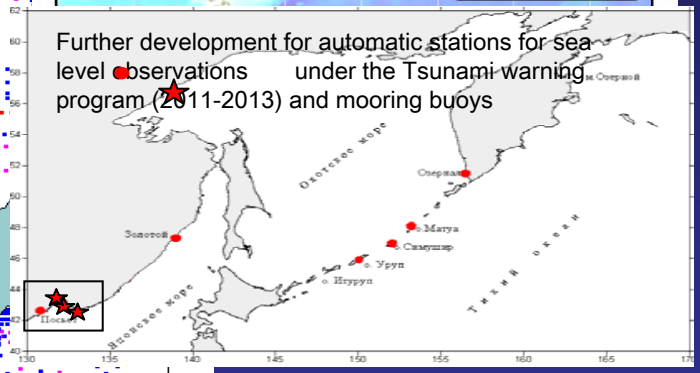
Marine meteorological, wave, sea-surface temperature and salinity real-time data of 13 oceanographic stations distribution

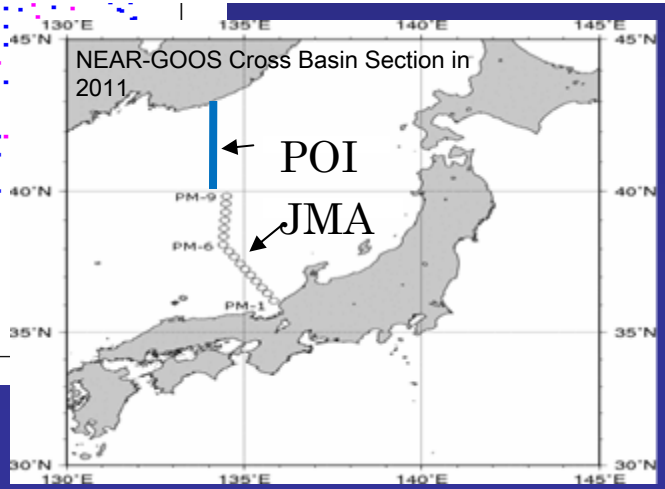
meteorological, temperature, salinity delayed mode data of 7 sectional observation stations distribution

-regular, irregular
-daily, monthly, bi-monthly etc.
-One of the most densely and frequently surveyed area in the world









Future works

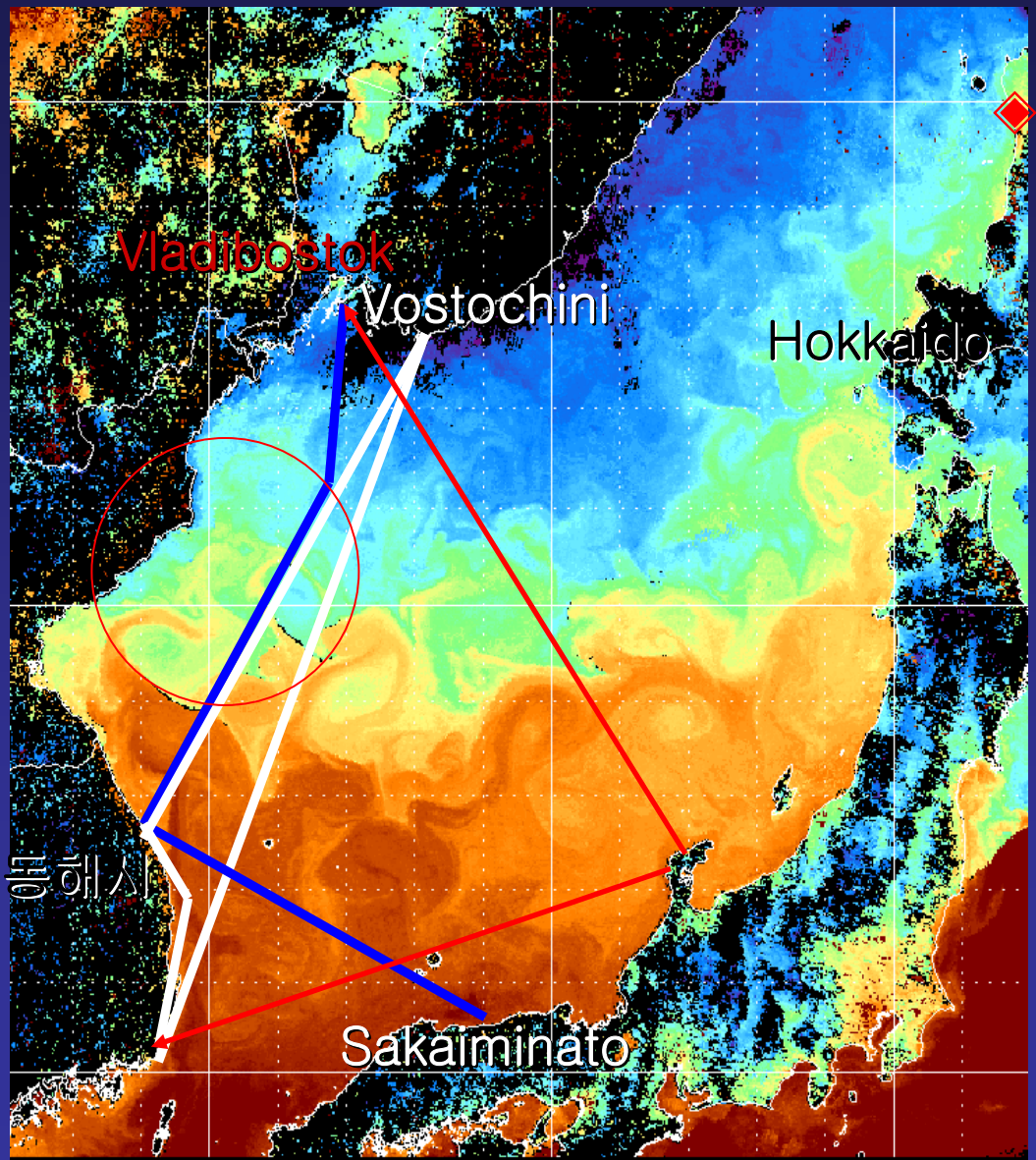
Work Plan for the Coming Intercessional Period

- To enhance the efficiency and visibility of NEAR-GOOS
- To make the data more open, to continue improve the data exchange and in order to make the data available for operational use and provide good services to the users
- To consider the possibilities of expanding the data types (not only physical data, but also including non-physical data).
- To improve the cooperation on the data products development and services
- To establish the NEAR-GOOS Working Group on Products with the goal to improve the NEAR-GOOS products in a comprehensive manner
- To retain the NEAR-GOOS Working Group on Data Management for the efficient and effective operation of the NEAR-GOOS database system

Cooperation with other regional projects

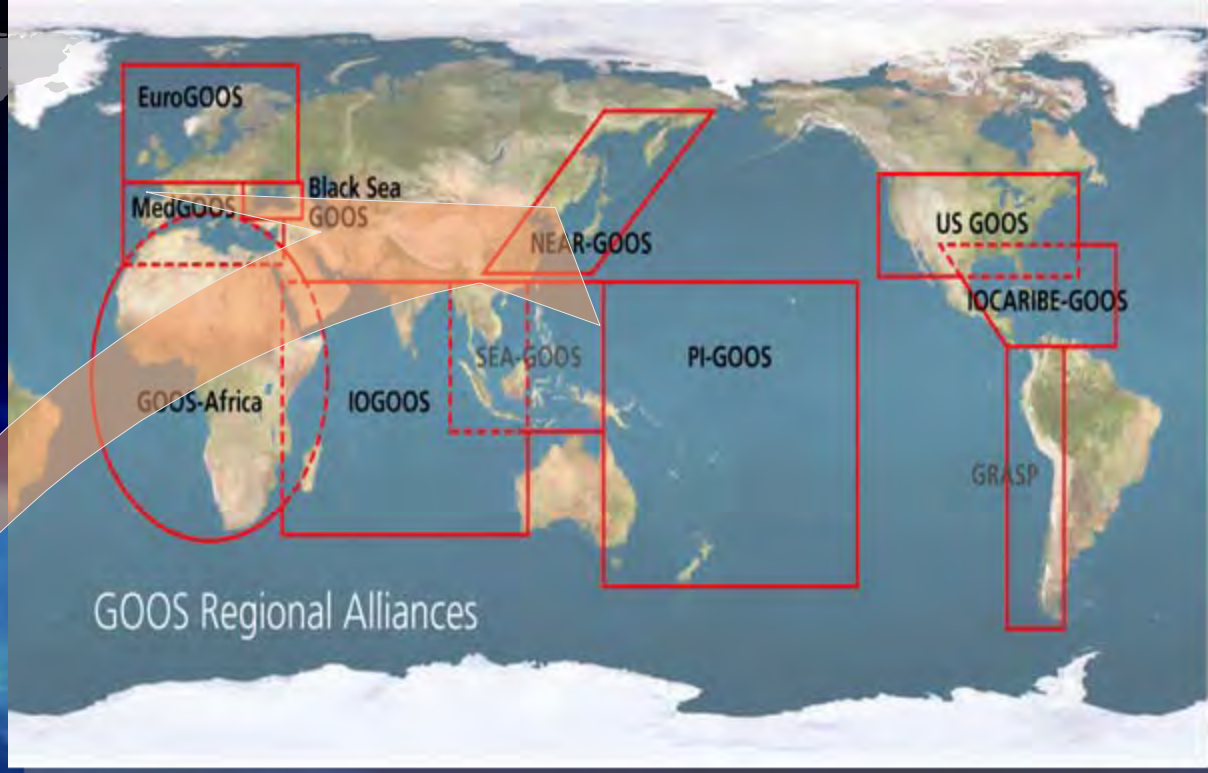
- Products from SEAGOOS Ocean Forecasting Demonstration System will be share with NEAR-GOOS.
- To continue cooperation with PICES
- To continue cooperation with NOWPAP to development the capacity building for “Training courses on remote sensing data analysis”
- To cooperate with ODINWESTPAC in using all of the data and products, and the information of NEAR-GOOS which includes the organizations, expertise to ODINWESTPAC

Ferry boats monitoring

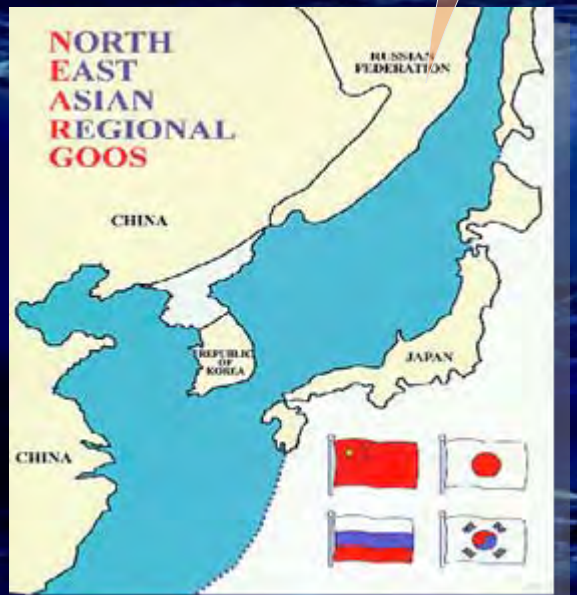


Monitoring the variability in the surface layers in the region using Ferry boats.

- Characteristics of the physical and biogeochemical variables in the surface layer.



NEAR-GOOS



GRAs

Thank you!