

**TAB 9: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**

## NOAA's Activities with China

### U.S.-China Science and Technology Agreement

Two of the protocols under the U.S./China S&T Agreement were also signed in 1979, and are administered on behalf of the U.S. government by the National Oceanic and Atmospheric Administration: the Marine and Fishery (M&F) Science and Technology Protocol and the Protocol for Cooperation in Atmospheric Sciences.

**The Protocol on Atmosphere Sciences** is administered by the National Weather Service (NWS), National Oceanic and Atmospheric Administration (NOAA) for the United States, and the Chinese Meteorological Administration (CMA) for China. The purpose of the Protocol on Atmospheric Sciences is to promote the advancement of meteorological science for the benefit of the public. The principal goal of the Protocol is to improve weather forecasting. Activities under the Protocol involve public domain information. There are no activities or personnel exchanges that involve sensitive or security issues.

#### NOAA-CMA Cooperative Activities

##### *Climate and Monsoons*

1. CMA scientists visited NOAA's Climate Prediction Center working towards an improvement of understanding and prediction of the U.S. and China climate as well as assessing the performance of NOAA products.
2. Several CMA scientists participated at NOAA Climate Workshops and Symposiums
3. Delegations from the Chinese Meteorological Society visited NOAA's National Centers for Environmental Prediction (NCEP) as well as delegations from CMA's Meteorological Bureau of Guangdong, Shanxi and Jiangxi Provinces and the CMA Department of Disasters Prevention Forecasting.

##### *Exploratory Research*

Under the auspices of the US-China Atmospheric Science and Technology Protocol, the 1<sup>st</sup> China-US Workshop on Mesoscale Model, the Weather Research and Forecasting Model (WRF) Development and Cooperation was held with 49 participants, including representatives of NOAA, NCAR, MCNC, SUNY, and the University of Illinois in the US, Japan, Malaysia, Hong Kong China and Macao China.

##### **Satellite Meteorology**

1. U.S and Chinese satellite experts exchanged information on developments of polar orbiting satellite data retrieval methods and on precipitation estimation based on satellite data.
2. U.S and Chinese satellite experts conducted exchanges on quality control of geostationary satellite wind data and attended the World Meteorological Organization (WMO) training activity on virtual
3. U.S and Chinese satellite experts exchanged software for direct reception of Moderate Resolution Imaging Spectroradiometer (MODIS) and data from a Chinese Meteorological Satellite, FY-1D.

### Meteorological Modernization

1. Weather Radar – CMA scientists attended the WSR-88D ORPG software workshop and a NOAA radar scientist the Shanghai Meteorological Bureau
2. Advanced Weather Interactive Processing System (AWIPS)– A 7-member CMA delegation visited NWS on AWIPS. AWIPS is the basis for the US National Weather Service.
3. Automated Surface Observing System (ASOS) - Mr. Zhou Lin and Ms. Li Xiang from CMA visited NWS on ASOS from April 22-26, 2002.

### Training and Participation

Six CMA visiting scientists participated in the 18-month collaborative training program at the NWS.

1. **Ms. Liang Feng** (Visiting Scientist) is currently working in the Mesoscale Prediction Branch of MD. Ms. Liang is on assignment working on the “LAMP Gridded Thunderstorm Product” Project: To establish short-term statistic thunderstorm forecast by using radar, lightning data and MOS products, March 2003-September 2004 in Silver Spring, MD.
2. **Mr. Zeng Qing** (Visiting Scientist) is currently working trainee in the Decision Assistance Branch of MDL. Mr. Zeng is on assignment working on the Fog monitoring and warning by using GOES multiple channel satellite products for SAFESEAS and rapid update Meso-cyclone Detection product for SCAN, March 2003- September 2004 in Silver Spring, MD.
3. **Mr. Shen Yu** (Visiting Scientist) is currently working in the Statistical Model Branch of MDL. Mr. Shen is on assignment working to provide customers operational Weather Element Forecast Guidance, March 2003- September 2004 in Silver Spring, MD.
4. **Mr. Su Debin** (Visiting Scientist) is currently working in the Product Generation Branch of MDL. Mr. Su is working on assignment with the Interactive Forecast Preparation System (IFPS) sub-system of AWIPS, September 2003- February 2005 in Silver Spring, MD.
5. **Mr. Dai Jianhua** (Visiting Scientist) completed 17 months training in the Now-cast Guidance Product Task Branch, Meteorological Development Laboratory (MDL) during February 2001-July 2002 in Silver Spring, Maryland (MD). His main task was developing varies code to improve the Now-cast Guidance Product.
6. **Mr. Li Yuean** (Visiting Scientist) completed 17 months training in the Systems Engineering Center during February 2001-July 2002, Silver Spring, MD. He worked on the Local Data Acquisition and Dissemination (LDAD) sub-system of AWIPS.

**The Protocol on Marine and Fisheries Science and Technology** is administered by NOAA Research , with activities spanning the following **six** scientific areas: (1) Data and Information Exchange, (2) Marine Environmental Services, (3) Understanding the Role of the Oceans in Climate Change, (4) Living Marine Resources, (5) Marine and Coastal Management, and (6) Polar Sciences. In China, NOAA's counterpart organizations for this agreement are the State Oceanic Administration, the Ministry of Agriculture, the Chinese Academy of Sciences, the Institute of Atmospheric Physics, the Polar Research Institute of China, and the Chinese Arctic and Antarctic Administration.

The 15<sup>th</sup> Joint Working Group (JWG) Meeting between the US and China for Cooperation in the Field of Marine and Fishery Science and Technology was held in Silver Spring, Maryland, March 5-6, 2002. At this meeting, both delegations hoped that the relationship between China and the US in science and technology cooperation would continue to broaden and deepen under the marine and fisheries protocol. The next JWG Meeting is tentatively scheduled for July, 2004 in Beijing, China.

More details regarding the sub-panel meetings held during the period of 2002-2004 under the auspices of this protocol are:

### 1) Oceanographic Data and Information Exchange

The Joint Coordination Panel for Data and Information Cooperation held its eighth meeting at the National Marine Data and Information Service (NMDIS), Tianjin, China during the period from October 18-23, 2003. After several days of detailed discussion, an agreement was reached in the areas of the following items: 1) continued cooperation and data exchange between SOA/NMDIS (, Chinese State Oceanic Administration/National Marine Data Information Service) and NOAA/NESDIS (U.S. National Oceanic and Atmospheric Administration/National Environmental Satellite Data and Information Service); 2) oceanographic data processing, assimilation, and quality control; 3) cooperative research on data and information management and coastal monitoring; 4) marine geological and geophysical data exchange; and 5) publication exchange. It was agreed the next panel meeting will be held in the United States during the fall of 2005.

Meeting costs and program supports: Approximately \$30,000

Transfer of technology: No

### **2) Marine Environmental Services**

In recent years, NOAA has worked collaboratively with the Chinese State Oceanic Administration on the Yellow Sea Large Marine Ecosystem (LME) Project, introducing ecosystem-based assessment and management methodologies to be implemented jointly by China and Korea. The Yellow Sea Large Marine Ecosystem Project is being supported by the Global Environment Facility (GEF) for five years at \$25 million.

Meeting costs and program supports: Approximately \$8,000

Transfer of technology: No

### **3) Understanding the Role of the Oceans in Climate Change**

Since 1994, U.S.-China cooperation in coupled ocean/atmosphere climate research became dormant primarily due to shift in China's research priorities and the lack of funding at the Chinese State Oceanic Administration. Climate events, such as the 1997/98 El Niño event, which resulted in significant human and economic impacts in both the U.S. and China, rekindled renewed interest in furthering cooperation on coupled ocean/climate observations. Not only has China's increased investments in climate change attracted the attention of U.S. scientists, but

also gaining access to China's historical climate data sets continues to be a topic of increasing interest to the U.S. coupled ocean/atmosphere modelers and data and information community. NOAA will pursue the possibility of rejuvenating the U.S.-China Joint Coordination Panel for the Role of the Oceans in Climate Change Cooperation to promote a partnership between the two countries to expand ocean observation coverage/capabilities at the 16<sup>th</sup> Joint Working Group Meeting of the U.S.-China Marine and Fisheries Science and Technology Agreement in Beijing in 2004.

Meeting costs and program supports: \$0K

Transfer of technology: No

#### **4) Living Marine Resources**

The U.S.-China Joint Coordination Panel for Living Marine Resources (LMR) held its fifth meeting in Sanya, Hainan Province, People's Republic of China, April 19-21, 2002. Both delegations reaffirmed that the U.S.-China LMR Program has established an effective vehicle for cultivating win-win partnerships and collaborative relations between the two countries. The U.S. scientific and commercial sectors have benefited from access to large scale fisheries and aquaculture production technologies practiced in China, and the Chinese scientific community has gained access to U.S. research labs to assist its scientists in addressing disease, genetic and biotechnology issues, and environmentally-friendly fish farming techniques. At this meeting, both delegations agreed that the U.S. and China will continue collaborative efforts to optimize integrated aquaculture and fisheries technologies by promoting new concepts of integrated aquaculture (marine polyculture) systems including algae, filter-feeders, mollusks, shrimp, and finfish; adopt environmentally-friendly aquaculture practices to help sustain and increase seafood supply; advance our understanding of biosecure systems, bioremediation techniques, and biotechnology applications mutually beneficial for both countries. The next panel meeting will be held in the United States in 2004.

Meeting costs and program supports: Approximately \$15,000

Transfer of technology: No

#### **5) Marine and Coastal Management**

The U.S.-China Joint Coordination Panel for Marine and Coastal Management held its third meeting in Xi'an, Shaanxi Province, People's Republic of China, November 3-4, 2003. Both delegations agreed that the U.S. and China should continue to cooperate in the areas of biodiversity protection, ecosystem monitoring, and sea area use. Both parties agreed to develop and implement the new work plan under the framework of marine ecological environment management, sea area use and management, GEF projects, and overarching programs. On this basis, both sides confirmed the work plan for 2004-2005 in the fields of: 1) marine protected area management; 2) harmful algal blooms (HAB) research; 3) Xiamen (China) marine ecosystem

restoration; 4) sea area use management; 5) marine biodiversity conservation; 6) development of a twinning program (Bohai Sea, Manila Bay, Chesapeake Bay, Seto Inland Sea); 7) marine policy and management training; 8) participation in the *Ocean Expo 2005* in China; 9) hosting a conference: Aquaculture in the context of marine ecosystem management ; and 10) a joint conference on legislation and law enforcement in the coastal zone. The implementation of activities identified in the work plan is dependent upon the availability of funding. The next panel meeting will be held in the United States in 2005.

Meeting costs and program supports: Approximately: \$20,000

Transfer of technology: No

## **6) Polar Sciences**

Endorsed by the Joint Working Group at the 15<sup>th</sup> Meeting between the United States and China under the auspices of the U.S.-China Protocol on Marine and Fishery Science and Technology Cooperation, the First U.S.-China Joint Coordination Panel Meeting for Polar Science Cooperation was held in Seattle, Washington, October 26 and 29, 2003. Both China and the U.S. delegations reemphasized their common understanding that a complex suite of significant atmospheric, oceanic, and terrestrial changes has occurred in the Arctic in the last decades, and along with other countries, their concern over the changes in the Arctic and desire to learn how these changes will impact climate and economies in our two countries. It was agreed that both parties will continue collaborative efforts to seek ways to implement the following ideas and interests: 1) measurements of aerosol and carbon cycle gases; 2) impacts of Arctic climate on the Northern Hemisphere mid-latitude climates regimes; 3) sea-ice-air mass and energy exchange in the polar regions; 4) convening a workshop in China on climate forecasting, atmospheric observatory and carbon cycle gases measurements; 5) impacts of climate and other physical change on ecosystems in the Chukchi Sea and Bering Seas; 6) investigation of oceanographic variability and modification of the Pacific water as it flows across the Chukchi Sea and Canadian Basin; 7) ice conditions in the Arctic and sub-Arctic seas, physical and biogeochemical measurements over the shelf-slope-deep basin regions of the western Arctic; 8) continental shelf processes in the Chukchi Sea and Bering Seas, 9) investigation of cross-shelf transport of plankton and seasonal variability in the western Arctic; 10) study on haze and carbon sink in the Arctic regions; 11) carbon biogeochemical cycles in the Arctic Ocean; 12) Paleoenvironmental and Paleoclimate evolution of the Arctic and Sub-Arctic regions, and 13) a long term observatory at the pole. The implementation of activities identified above is dependent upon the availability of funding. The next panel meeting will be held in China in the spring of 2005.

Meeting costs and program supports: Approximately \$35,000

Transfer of technology: No

## **United States-People's Republic of China Bilateral Fisheries Consultations**

Since 1999, the United States and China have met on a regular basis to review the full range of fisheries issues of mutual concern. The last bilateral fisheries meeting was held in Beijing in May 2002. The United States is considering hosting the next meeting in 2004.

Meeting costs: The meeting will be held at the Department of States in Washington, D.C., so the costs to NOAA will be limited to the travel expenses of any NOAA personnel who would need to attend the meeting tentatively scheduled for 2004

Transfer of technology: No

Chinese participants: Since we don't have an agenda for the meeting yet, we have not identified any Chinese participants.

## **Memorandum of Understanding Between the Government of the United States of America and the Government of the People's Republic of China on Effective Cooperation and Implementation of United Nations General Assembly Resolution 46/215 of December 20, 1991**

The United States and China have continued to work to ensure effective implementation of UN General Assembly Resolution 46/215 (the moratorium on large-scale high seas driftnet fishing) in the North Pacific Ocean pursuant to the terms of the MOU signed in Washington D.C. on December 3, 1993. The MOU established procedures for law enforcement officials of either country to board and inspect U.S. or PRC flagged vessels suspected of driftnet fishing. It also established a shiprider program, which allows PRC fisheries enforcement officials to embark on U.S. Coast Guard resources each driftnet fishing season. Pursuant to this provision, the PRC has provided enforcement officials to the USCG each year since the MOU entered into force. As a bilateral enforcement agreement, the MOU facilitates/expedites investigations of suspicious vessels when they are encountered on the high seas. The current MOU expires on December 31, 2004.

Meeting costs and program supports: NOAA costs will be on the order of \$50K over the next 2 years.

Transfer of technology: No

Chinese participants: The U.S. Coast Guard is leading this program and keeps the names and contact information for the six Chinese enforcement officials who participated in this program over the past 2 years.

## **U.S.-PRC Governing International Fisheries Agreement (GIFA)**

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, Title II, Section 201, foreign fishing within the U.S. 200-mile Exclusive Economic Zone may only be conducted under a GIFA. The United States and the PRC have maintained a bilateral fisheries relationship

under the terms of a GIFA since 1995. The current GIFA expires on July 1, 2004. Steps are being taken to try to extend it to July 1, 2007.

Meeting costs and program supports: Not applicable

Transfer of technology: No

Chinese participants: Not applicable

## **Climate Change**

The United States and China also have an ongoing bilateral dialogue on climate change, managed by the U.S. Department of State, which in addition to the two Protocols, provides a forum for exchange of climate specific research and endeavor. Since the U.S. and China experience similar climate patterns, both countries recognize the importance of cooperation to better understand the impact of climate on society.

NOAA's cooperation with China on climate change focuses on joint research and applications, including expanding access to environmental data from China and encouraging China to be a partner in international climate observation programs. Cooperating with China in these areas is an important step towards improving global climate data coverage and, subsequently, climate forecasts.

## **Earth Observing Satellites**

China took over the chairmanship of the Committee on Earth Observing Satellites (CEOS), from NOAA at the start of 2004.

## **The Protocol on Marine and Fisheries Science and Technology**

### **1) Oceanographic Data and Information Exchange**

Meeting costs and program supports: Approximately \$30K

Transfer of technology: No

Chinese participants:

---

Prof. Shaohua Lin  
Director-General  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010803  
Fax: 86-22-24010801  
Email: shlin@mail.nmdis.gov.cn

Ms. Ping Qi  
Program Officer  
Department of Marine Environmental Protection  
State Oceanic Administration  
1 Fuxingmenwai Street  
Beijing 100860, P.R. China  
Tel: 86-10-68047644  
Fax: 86-10-68030799  
Email: yb@soa.gov.cn

Prof. Guangshun He  
Deputy Director-General  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24015299  
Fax: 86-22-24010926  
Email: gshe@mail.nmdis.gov.cn

Dr. Sihai Li  
Director, Information Technology Division  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010818  
Fax: 86-22-24010926  
Email: sihaili@vip.sina.com

Ms. Yan Wei  
Program Officer  
Department of International Cooperation  
State Oceanic Administration  
1 Fuxingmenwai Street  
Beijing 100860, P.R. China  
Tel: 86-10-68048053  
Fax: 86-10-68048051  
Email: shb@soa.gov.cn

Mr. Ying Yang  
Director of Library  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010827  
Fax: 86-22-24010926  
Email: yangy@mail.nmdis.gov.cn

Mr. Manchun Chen  
Director, Division of Marine Environmental Assessment  
and Prediction  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010845  
Fax: 86-22-24010926  
Email: cmc@mail.nmdis.gov.cn

Ms. Li Qin  
Deputy Director  
International Ocean Institute China Operational Center  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010859  
Fax: 86-22-24010859  
Email: ioi@mail.nmdis.gov.cn

Prof. Binglan Li  
National Oceanographic Data Center  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010833  
Fax: 86-22-24010926

Prof. Fengyi Guo  
National Oceanographic Data Center  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010833  
Fax: 86-22-24010926

Dr. Guijun Han  
Division of Marine Environmental Assessment and  
Prediction  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010846  
Fax: 86-22-24010926

Dr. Kexiu Liu  
Division of Marine Environmental Assessment and  
Prediction  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010846  
Fax: 86-22-24010926

Dr. Fengying Ji  
National Oceanographic Data Center  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010830  
Fax: 86-22-24010926  
Email: argo@mail.nmdis.gov.cn

Ms. Huifen Xue  
National Oceanographic Data Center  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010830  
Fax: 86-22-24010926  
Email: argo@mail.nmdis.gov.cn

Ms. Jixiang Chen  
National Oceanographic Data Center  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010830  
Fax: 86-22-24010926

Mr. Xuefeng Wang  
National Oceanographic Data Center  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010845  
Fax: 86-22-24010926

Ms. Dongmei Qi  
International Ocean Institute China Operational Center  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010859  
Fax: 86-22-24010859  
Email: ioi@mail.nmdis.gov.cn

Ms. Nanyan Huang  
Division of S.&T. Planning  
National Marine Data and Information Service  
State Oceanic Administration  
93 Liuwei Road, Hedong District  
Tianjin 300171, P.R. China  
Tel: 86-22-24010885  
Fax: 86-22-24010926  
Email: zhaoxc@mail.nmdis.gov.cn

## **2) Marine Environmental Services**

### Chinese participants:

Mr. Haiqing Li  
Director General  
Department of International Cooperation  
State Oceanic Administration  
1 Fuxingmenwai Ave.  
Beijing 100860, People's Republic of China  
Tel: 86-10-6804-8055  
Fax: 86-10-6803-0799

## **3) Understanding the Role of the Oceans in Climate Change**

No Chinese participants.

## **4) Living Marine Resources**

### Chinese participants:

ZHANG Xianliang  
Vice President  
Chinese Academy of Fishery Sciences (CAFS)  
Chinese Academy of Fishery Sciences  
#150 Qingtacun, South Yongding Road  
Beijing 100039, People's Republic of China

LIU Ruiyu  
Professor  
Institute of Oceanology  
Chinese Academy of Sciences  
7 Nanhai Road  
Qingdao, Shandong 266071, China

ZHOU Yingqi  
President  
Shanghai Fisheries University  
334 Jun Gong Road  
Shanghai 200090, People's Republic of China  
Tel: 011-86-21-6571-0293  
Fax: 011-86-21-6568-4287

ZHU Mingyuan  
Research Professor  
Director of the Division of Marine Biology  
First Institute of Oceanography  
State Oceanic Administration (SOA)  
No 6, Xianxialing Road  
Hi-Tech Industrial Park  
Qingdao, 266061, People's Republic of China  
Tel: 011-86-532-889-7447  
Fax: 011-86-532-889-7548

LI Yingren  
Associate Professor  
Director  
Division of Foreign Relations and Cooperation  
Chinese Academy of Fishery Sciences  
#150 Qingtacun, South Yongding Road  
Beijing 100039, People's Republic of China  
Tel: 011-86-10-6867-1170  
Fax: 011-86-10-6867-6685

WANG Qingyin  
Deputy Director  
Yellow Sea Fishery Research Institute  
Chinese Academy of Fishery Sciences  
Qingdao, People's Republic of China

LI Jiaer  
Research Professor  
Head of Shenzhen Base  
South China Sea Fishery Research Institute  
Chinese Academy of Fishery Sciences  
Guangzhou, People's Republic of China

NIE Shanming  
Director  
Division of Science and Technology  
Chinese Academy of Fishery Sciences  
#150 Qingtacun, South Yongding Road  
Beijing 100039, People's Republic of China

QU Dequan  
Director  
Marine Development Research Center  
Zhanjiang Ocean University  
40 Jiefang Road, Xiashan District  
Zhanjiang, Guangdong Province 524025  
People's Republic of China

WANG Aimin  
Department of Aquaculture  
Hainan University  
Haikou, Hainan Province  
People's Republic of China

## 5) Marine and Coastal Management

### Chinese participants:

---

Li Haiqing  
Director General  
Department of International Cooperation  
State Oceanic Administration  
People's Republic of China

Yu Qingsong  
Deputy Director General  
Department of Sea Use Management  
State Oceanic Administration  
People's Republic of China

Xu Sheng  
Deputy Director General  
Department of Environmental Protection  
State Oceanic Administration  
People's Republic of China

Wei Zhong  
Deputy Director General  
Oceanic Bureau of Guangxi Autonomous Region  
People's Republic of China

Zhou Lumin  
Deputy Director  
Marine and Fishery Bureau of Xiamen  
People's Republic of China

Zhou Qiulin  
Professor  
Third Institute of Oceanography  
State Oceanic Administration  
People's Republic of China

Li Sihai  
Director  
Division of Information Technology  
National Data and Information Service  
State Oceanic Administration  
People's Republic of China

Wang Juying  
Director  
Division of Environmental Chemistry  
National Marine Environmental Monitoring Center  
State Oceanic Administration  
People's Republic of China

Liang Qun  
Division of Marine Environmental Protection  
Oceanic Bureau of Guangxi Autonomous Region  
People's Republic of China

Zhou Liang  
Division of Development and Planning  
Oceanic Bureau of Tianjin  
People's Republic of China

Yu Jian  
Division of Supervision and Management  
Department of Environmental Protection  
State Oceanic Administration  
People's Republic of China

Chen Yue  
Director  
Division of International Organizations  
Department of International Cooperation  
State Oceanic Administration  
People's Republic of China

Liang Jinzhe  
Director  
Division of Bilateral Affairs  
Department of International Cooperation  
State Oceanic Administration  
People's Republic of China

Wei Yan  
Program Officer  
Division of Bilateral Affairs  
Department of International Cooperation  
State Oceanic Administration  
People's Republic of China

Interpreters:  
Tang Dongmei  
Program Officer  
Department of International Cooperation  
State Oceanic Administration  
People's Republic of China

Wang Antao  
Program Officer  
Department of International Cooperation  
State Oceanic Administration  
People's Republic of China

## 6) Polar Sciences

### Chinese participants:

---

CHEN Bo  
Research Scientist  
Polar Research Institute of China (PRIC)  
State Oceanic Administration (SOA)  
451 Jinqiao Road, Pudong District  
Shanghai 200129, China  
Tel: 86-21-58711026  
Fax: 86-21-58711663

LI Jianping  
Deputy Director  
State Key Laboratory of Numerical  
Modeling for Atmospheric Sciences  
And Geophysical Fluid Dynamics (LASG)  
Institute of Atmospheric Physics (IAP)

Chinese Academy of Sciences (CAS)  
Building 40, Huayanli  
P.O.Box 9804  
Beijing 100029, China  
Tel: 86-10-6203-5479  
Fax: 86-10-6204-3526

LIANG Fengkui  
First Secretary for Science and Technology  
Embassy of China  
2300 Connecticut Ave., N.W.  
Washington, D.C. 20008, USA  
Tel: (202) 328-2531  
Fax: (202) 265-7523

QIN Weijia, Executive Secretary  
Head, Division of Science Programs  
Chinese Arctic and Antarctic Administration  
State Oceanic Administration (SOA)  
No. 1, Fuxingmenwai Ave.  
Beijing 100860, China  
Tel: 86-10-6801-1632  
Fax: 86-10-6801-2776

XU Yongfu  
State Key Laboratory of Atmospheric  
Boundary Layer Physics and  
Atmospheric Chemistry (LAPC)  
Institute of Atmospheric Physics (IAP)  
Chinese Academy of Sciences (CAS)  
Building 40, Huayanli  
P.O.Box 9804  
Beijing 100029, China  
Tel: 86-10-6237-7281  
Fax: 86-10-6204-1393

ZHANG Zhanhai, Co-Chair  
Director-General  
Polar Research Institute of China  
State Oceanic Administration (SOA)  
451 Jiqiao Road, Pudong District  
Shanghai 200129, China  
Tel: 86-21-6850-7533  
Fax: 86-10-5871-1663

ZHAO Jinping  
Deputy Director-General  
First Institute of Oceanography (FIO)/SOA  
6 Xianxialing Road  
Hi-Tech Industrial Park  
Qingdao 266061, China  
Tel: 86-532-889-9390  
Fax: 0086-532-889-9390

ZOU Han  
Deputy Director  
Division of Atmospheric Environment  
Institute of Atmospheric Physics (IAP)  
Chinese Academy of Sciences (CAS)  
Building 40, Huayanli P.O. Box 9804  
Beijing 100029, China  
Tel: 86-10-6237-8271  
Fax: 86-10-6202-5883