

# **International Workshop on Regional Ecology and its Environmental Effect**

**- Dust Sand Storm, its Impact and Mitigation Countermeasure -**

## **Agenda**

(3-5 Dec. 2006, Beijing)

### **Dec. 2,2006**

**14:00-20:00 Registration: (Hotel : Xin Da Du Hotel )**

### **Dec. 3,2006**

**08:30 -10:30 Registration: (Hotel : Xin Da Du Hotel )**

### **Opening Ceremony—Part I**

(钓鱼台大酒店二层多功能厅 2<sup>nd</sup> Multi-function Hall, Diaoyutai Hotel)

**Bus from Xin Da Du Hotel to Diaoyutai Hotel**

**(Participants accommodating in Xin Da Du Hotel--Departure at 11:45, Arrive at 12:00 )**

(Other participants can go to Diaoyutai Hotel Directly but please make sure to arrive there before 12:00)

**Venue: *Diao Yu Tai Hotel***

Chairman: Prof. Zhang Yutian (CRAES)

<b>12:00-12:10</b>	<b>Workshop Registration</b>
<b>12:10-12:30</b>	<b>The three Environmental Ministers Arrive</b>
<b>12:30-12:40</b>	<b>Speech by Minister of SEPA, P.R. China</b> Mr. Zhou Shengxian
<b>12:40-12:50</b>	<b>Speech by Minister of MOE, Japan</b> Mr. WAKABAYASHI Masatoshi
<b>12:50-13:00</b>	<b>Speech by Minister of MOE, Korea</b> Mr. LEE, Chi-Beom
<b>13:00-13:10</b>	<b>Short Break</b>

### **Opening Ceremony—Part II**

Chairman: Prof. Zhang Yutian (CRAES)

<b>13:10-13:20</b>	<b>Speech by President, CRAES, China</b> Prof. Meng Wei
<b>13:20-13:30</b>	<b>Speech by President, NIES, Japan</b> Prof. OHTSUKA, Ryutaro
<b>13:30-13:40</b>	<b>Speech by President, NIER, Korea</b> Prof. Yoon, Seong-Kyu

### **Plenary Session I**

Chairman: Prof. Meng Wei, CRAES & Prof. OHTSUKA, Ryutaro, NIES

**Keynote Speech (25 minutes) with Q&A (5 minutes)**

- 13:40-14:10**      **The Dust Storm and its Impact on Beijing's Air Quality**  
Prof. Ren Zhenhai (Academician of Chinese Academy of Engineering, in CRAES)
- 14:10-14:40**      **Adaptation Strategies and Cause of Blown-sand Disaster in China**  
Prof. Shi Peijun , Beijing Normal University

**Plenary Session II**

Chairman: Prof. Yoon, Seong-Kyu & Prof. Shi Peijun, Beijing Normal University

**Invited Speech (20minutes) with Q&A (5 minutes)**

- 14:40-15:05**      **Characterization of Northeast Asia Sand and Dust Storm (SDS) and Prediction Methods**  
Prof. Quan Hao, Sino-Japan Friendship Center for Environmental Protection
- 15:05-15:30**      **Potential Capability of Adjoint Inverse Modeling of Dust Emission and Transport over East Asia for Real-Time Dust Forecasting**  
Prof. UNO, Kyushu University, Japan
- 15:30-15:50**      **Coffee Break**
- 15:50-16:15**      **The Evolution Mechanism of Dust Storm and Its Impact on the Atmospheric Chemistry over China**  
Prof. Zhuang Guoshun (FuDan University & Beijing Normal University)
- 16:15-16:40**      **Synthetic Analyses of Asian Dust in 2006 over the Korean Peninsula**  
Dr. Park, Il-Soo, NIER
- 16:40-17:05**      **Soil of Mongolia and Dust Storm**  
Prof. D. Dorjgotov, Academician, MAS & NUM
- 17:05-17:30**      **Advances of Research on East Asia's Sand-dust Aerosols and the Effect on Beijing**  
Prof. Chai Fahe , CRAES
- 17:30-17:50**      **Close Remark**
- 18:00-19:30**      **Welcome Banquet**  
会议中心二楼多功能厅 Multi-functional Hall, 2<sup>nd</sup> Floor, Meeting Center

**Dec. 4, 2006**

(新大都饭店主楼二层华兴宫 Hua Xing Hall, 2<sup>nd</sup> Floor, Main Building, Xin Da Du Hotel )

**Session I**

Chairman: Prof. Chai Fahe (CRAES) & Dr. Shiro Hatakeyama (NIES)  
**Speech (15minutes) with Q&A (5 minutes)**

*There will be 20 minutes for a special speech from SEPA (To be confirmed)*

- 08:30-08:50**      **Meteorological and Chemical Analysis of Two Dust Storm Events in March, 2002 in Beijing**  
Prof. He Kebin, Tsing Hua University
- 08:50-09:10**      **Korea-China Co-research Project : A Study on Acute Effects of Fine Particles on Pulmonary Function**  
Dr. Kim, Dae-Seon, NIER
- 09:10-09:30**      **Data Assimilation Experiments for Severe Dust Storm Forecasts Over China Using Ensemble Kalman Filter**  
Prof. Wang Zifa, Atmospheric Physics Institute, Chinese Academy of Sciences

- 09:30-09:50**      **Changes of Chemical Composition of Aerosols Measured at Cape Hedo, Okinawa after Long-range Transport from the East Asia with Asian Dust**  
Dr. Shiro Hatakeyama, NIES
- 09:50-10:10**      **Influence of Gaseous Oxalic Acid on the Deposition and Oxidization of Sulfur Dioxide onto Yellow Sand**  
Prof. Kazuhiko Sakamoto, Saitama University, Japan
- 10:10-10:30**      **Coffee Break**

## **Session II**

Chairman: Prof. Wang Wei (CRAES) & Dr. Park Il-Soo (NIER)

**Speech (15minutes) with Q&A (5 minutes)**

- 10:30-10:50**      **Some Preliminary Results of Investigations of the Aerosol and Chemical Components of Gobi Mongolia**  
Prof. Oyunchimeg D, Ministry of Nature and Environment,  
Gankhuyag E, Institute of Meteorology and Hydrology, Mongolia
- 10:50-11:10**      **Chemical Characteristics of Fine Particles during Spring Dust Storm Dominant Period in Two Chinese Cities, Baotou and Wuwei**  
Prof. Hu Min, Beijing University
- 11:10-11:30**      **Two Results on Asian Dust at Coast Areas of China and Japan**  
Prof. Zhang Daizhou, Prefectural University of Kumamoto
- 11:30-11:50**      **A Mechanism for the Increase of Pollution Elements in Dust Storms in Beijing**  
Dr. Guo Jinhua, Beijing Normal University
- 11:50-12:00**      **Close Remark**
- 12:00-13:30**      **Lunch**  
主楼一层咖啡厅-餐券就餐 Coffee House, 1<sup>st</sup> Floor, Main Building, with Meal Ticket
- 13:00-14:00**      **Poster Section**

## **Session III**

Chairman: Dr. SHIMIZU, Hideyuki (NIES) & Dr. Kim Dae-Seon (NIER)

**Speech (15minutes) with Q&A (5 minutes)**

- 13:30-13:50**      **Numerical Simulation of Dust Storms in the Spring of 2001 over Northern China**  
Prof. Zhang Yuanhang, Beijing University
- 13:50-14:10**      **Heterogeneous Uptake Sulfur-containing Compounds over Dust**  
Prof. Chen Jianmin, Fudan University
- 14:10-14:30**      **Ground Observations of A Strong Dust Storm in Beijing in March 2002**  
Prof. Zhang Renjian, Institute of Atmospheric Physics, Chinese Academy of Sciences
- 14:30-14:50**      **Light Elimination Character of Aerosol in Dust Storm Background Region**  
Dr. Zhang Xiaoling, National Meteorological Center of CMA
- 14:50-15:10**      **Movement of Asian Dust Revealed by Network Observations Using Two-wavelength Polarization Lidars**  
Dr. SUGIMOTO Nobuo, NIES
- 15:10-15:30**      **Coffee Break**

## **Session IV**

Chairman: Prof. Gao Jixi (CRAES) & Dr. Hong, You-Deog (NIER)

**Speech (15minutes) with Q&A (5 minutes)**

- 15:30-15:50 Road dust Loadings and its Source Characteristics in Beijing**  
Dr. Jianhua Chen, CRAES
- 15:50-16:10 Germination Responses of Some Key Plant Species Grown at Horqin Sandy Land of China to the Simulated Desertificated Conditions**  
Prof. Chen Lijun, Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang
- 16:10-16:30 Recent Interannual Variation in Dust from Changes in Emission and Transport**  
SUGATA Seiji, NIES
- 16:30-16:50 Simulation of Impacts of Heterogeneous Reactions on Nitrate Aerosol Concentration Distributions over East Asia**  
Dr. Zhang Meigen, IAP, Chinese Academy of Sciences
- 16:50 – 17:10 Lidar Observations of Asian Dusts over Eastern China (31.90oN, 117.16oE)**  
Dr. Jun Zhou, Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences
- 17:10 – 17:30 The Mineralogy and Sources of Dust Particles Collected from a Severe Asian Dust Storm Event in Beijing in Spring 2006**  
Prof. Shao Longyi, China University of Mining and Technology
- 17:30 – 17:50 Hygroscopicity of Asian Dust Particles Mixed with Sulfate, Nitrate and Sea Salt**  
Dr. Shi Zongbo, Prefectural University of Kumamoto, Japan
- 17:50-18:00 Close remark**
- 18:00-19:30 Diner**  
主楼三层潮都城 Chao Du Hall, 3<sup>rd</sup> Floor, Main Building, with Meal Ticket

**Dec. 5, 2006**

(新大都饭店主楼二层华兴宫 Hua Xing Hall, 2<sup>nd</sup> Floor, Main Building, Xin Da Du Hotel)

### **Session I**

Chairman: Academician D. Dorjgotov (Mongolian Academy of Science)  
& Dr. Sugata Seiji (NIES)

**Speech (15minutes) with Q&A (5 minutes)**

*There will be 20 minutes for a special speech from SEPA (TBC)*

- 08:30-08:50 Study on the Situation of Land Desertification and Sand-dust storm Regionalization around Beijing Surrounding Area**  
Prof. Gao Jixi, CRAES
- 08:50-09:10 Interactive Effects of Water Stress and High Temperature on Growth and Photosynthesis of *Leymus chinensis* -- A Dominated Grass in a Semi-arid Steppe Ecosystem**  
Prof. Xu Zhenzhu, Institute of Botany, the Chinese Academy of Sciences
- 09:10-09:30 Physical and Chemical Properties of Asian Dust Collected at Gosan Background Site, Korea**  
Dr. Hong, Yoo-Deog, NIER
- 09:30-09:50 Dustfall Intensity, Characteristics and Provenance of the Settled Dust during an Unusual Dust Haze Event in Beijing**  
Prof. Liu Lianyou, Beijing Normal University
- 09:50-10:10 Atmospheric Aerosol Chemistry: from Molecular Cluster to Particle**  
Prof. Yang Xin, Fudan University
- 10:10-10:30 Coffee Break**

## Session II

Chairman: Dr. Yu Yunjiang (CRAES) & Dr. UEHIRO, Takashi (NIES)

### Speech (15minutes) with Q&A (5 minutes)

- 10:30-10:50**      **Quantitative Analysis on Impacts of Vegetation for Controlling Wind Erosion in the Area of Sandy Desertification**  
Prof. Ding Guodong, Beijing Forestry University
- 10:50-11:10**      **How to Accurately Understand the Problem of Wind Sand Storm and its Treatment?**  
Prof. Jiang Gaomin, Institute of Botany, the Chinese Academy of Sciences
- 11:10-11:30**      **Demonstration of Eco-village model in the Grassland Region of Northern China --- Causes of Land Degradation and the Countermeasures**  
Dr. Li Qingfeng, College of Ecology and Environmental Sciences, Inner Mongolia Agricultural University
- 11:30-11:50**      **Typical Appearance of DSS in Beijing Grasped by the Collaborative Monitoring Project with China, and Future Expectations of the New DSS Monitoring Network Based on the ADB/GEF Plan**  
Masataka NISHIKAWA, NIES
- 11:50-12:00**      **Close Remark**
- 12:00-13:30**      **Lunch**  
主楼一层咖啡厅-餐券就餐 Coffee House, 1<sup>st</sup> Floor, Main Building, with Meal Ticket
- 13:00-14:00**      **Poster Section**

## Panel Session A

Chairman: Prof. Wang Wei (CRAES) & Dr. Masataka Nishikawa (NIES)

### The Physical-Chemical Characteristic and its Transformation of Dust Aerosol & The Evolvement, Transportation and Monitoring

#### Speech (15minutes) with Q&A (5 minutes)

- 13:30 - 13:50**      **Characterization and Source Study of Asian Dust Episodes in Spring 2002 in Coastal China**  
Prof. Liu Xiande, CRAES
- 13:50 – 14:10**      **Dust-sand Monitoring Network of China Meteorological Administration and its Preliminary Results**  
Dr. Tang Jie, Chinese Academy of Meteorological Sciences
- 14:10 – 14:30**      **Individual Asian Dust Particles in the Southwestern Japan: Three Cases in 2005**  
Dr. Hiroko Ogata, Prefectural University of Kumamoto, Japan
- 14:30 – 14:50**      **Elevation of Urban Ambient Air Particulate Matter Level Causing by Suburban Area Wind Soil Erosion**  
Prof. Bai Zhipeng, Nan Kai University
- 14:50 – 15:10**      **Effect of Atmospheric Aerosols on the Photodecomposition of Nitrous Oxide**  
Prof. Kong Lingdong, Department of Environmental Science & Engineering, Fudan University
- 15:10 – 15:30**      **Influence of Sand-dust Weather on Air Quality of Beijing and its Solving Methods**  
Dr. Li Xue, Beijing Environmental Protection Bureau
- 15:30 – 15:50**      **Coffee Break**

Chairman: Prof. Chai Fahe (CRAES) & Dr. Park Il-Soo (NIER)

- 15:50 – 16:10      Microphysical and Chemical Characteristics of Individual Mineral Particles in Fog in Beijing**  
Dr. Li Weijun, China University of Mining and Technology in Beijing
- 16:10 – 16:30      Biological Effects of PM2.5 and PM10 Collected during the Dust Storm Period**  
Dr. Guo Xinbiao, Peking University School of Public Health
- 16:30 - 16:50      Validation of MODIS Aerosol Products by CSHNET over China**  
Prof. Wang Yuesi, Institute of Atmospheric Physics, Chinese Academy of Sciences
- 16:50 – 17:10      Isotopic Composition of Airborne Carbonate during Dust Storm and its Source Significances**  
Prof. Cao Junji, State Key Laboratory of Loess and Quaternary Geology, Institute of Earth Environment, Chinese Academy of Sciences

### **Panel Session B**

Chairman: Dr. Gao Qingxian (CRAES) & Dr. Kim Dae-Seon (NIER)

**The Simulation and Forewarning  
&  
Regional Ecological Change's Impact on Dust Storm  
&  
The Environmental Impact of Dust Events, its Prevention Planning and Technical Countermeasure**

**Speech (15minutes) with Q&A (5 minutes)**

- 13:30 - 13:50      The Influence of Dust-sand Storm to Air Quality of the Air pollution Prevention Pivot Cities from January to June of 2006**  
Dr. Tong Yanchao, China National Environmental Monitoring Center
- 13:50 – 14:10      The Analysis on Ecological Environment and Regional Ecological Function of Xilinguole Steppe**  
Prof. Li Zhenghai, College of Life Science, Dalian Nationalities University
- 14:10 – 14:30      Desertification Trend Discussion from 1981 to 2003 in China and Mongolia**  
Dr. Zhang Shihuang, Institute of Geographic Sciences and Natural Resources Research, CAS
- 14:30 – 14:50      Effects of Climate Change on Rocky Desertification—A Case Study in Yongshun County, Hunan Province, China**  
Dr. Xiong Yujiu, Beijing Normal University
- 14:50 – 15:10      Study on The Desert Bio-crust And Its Effecton**  
Prof. Yan Deren, Inner Mongolia Academy of Forestry
- 15:10 – 15:30      The Influence of Sand-dust Weather on Air Quality of Beijing in 2000~2005**  
Dr. Qiu Qihong, Beijing Municipal Environmental Monitoring Center
- 15:30 – 15:50      Coffee Break**

Chairman: Prof.. Gao Jixi (CRAES) & Dr. Sugimoto Nobuo (NIES).

- 15:50 – 16:10      Analysis on Transportation Paths and Source Locations of Sand-dusts Affecting Beijing**  
Zhang Zhigang, National Meteorological Center of CMA
- 16:10 – 16:30      Dust Storm Sources and their Transport Throughout China**  
Dr. Gao Qingxian, CRAES
- 16:30 - 16:50      Inner Mongolia Grassland Adds New Sand and Dust Source**

**16:50 – 17:10** Dr. Zan Chenggong, Inner Mongolia Eco-environment Monitoring Station  
**Study on Dust from Urban Construction in Beijing**  
Li Lingjun, Beijing Municipal Environmental Monitoring Center

## **Closing Ceremony**

Chairman: Prof. Zhang Yutian, CRAES

**17:10 – 18:00** Conclusion and Cooperative Suggestion

**19:00 - 20:30** Dinner

## **POSTER SESSION**

### **Activities of “Green Earth Network”, a Japanese Non-Profit Organization (NPO), in China**

Kunio TAKAMI<sup>1)</sup>, Hideyuki SHIMIZU<sup>2)</sup>, Takashi UEHIRO<sup>2)</sup>

<sup>1)</sup> Green Earth Network (GEN), 1-4-24-501 Ichioka, Minato, Osaka, Osaka, 305-8506, Japan

<sup>2)</sup> National Institute for Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki, 305-8506, Japan

### **Application of Laser Lidar on Dust Events in Hohhot**

Xuhui Dong<sup>1</sup>, Hui Qi<sup>1</sup>, Shuli Zhao<sup>2</sup>, Tiesuo Li<sup>3</sup>, Xuechun Bai<sup>3</sup>, Yian Di<sup>1</sup>, Yan Chen<sup>1</sup>, Yanpeng Wang<sup>1</sup>, Nobuo Sugimoto<sup>4</sup>, Masataka Nishikawa<sup>4</sup>, Kazuhiko Sakamoto<sup>5</sup>, Qingyue Wang<sup>5</sup>

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2. China National. Environmental Monitoring Centre, Beijing, China.100029

3. Inner Mongolia Environmental Monitoring Centre, Hohhot, China

4. National Institute for Environmental Studies, Japan.

5. Saitama University, Japan.

### **Atmospheric Deposition of <sup>137</sup>Cs Associated with the Asian Dust Event in March 2002.**

Hideshi FUJIWARA<sup>1)</sup>, Hideyuki SHIMIZU<sup>2)</sup>, Yasuhito SHIRATO<sup>3)</sup>, Toshiya OHKURO<sup>4)</sup>.

<sup>1)</sup> National Institute for Agro-Environmental Sciences, 3-1-3 Kannondai, Tsukuba, Ibaraki 305-8604, Japan

<sup>2)</sup> National Institute for Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki, 305-8506, Japan

<sup>3)</sup> Ministry of Agriculture, Forestry, and Fisheries of Japan, 1-2-1 Kasumigaseki, Chiyoda, Tokyo 100-8950, Japan

<sup>4)</sup> University of Tokyo, 1-1-1 Yayoi, Bunkyo, Tokyo 113-8657, Japan

### **Bioreactivity of Particulate Matter in Beijing Air: Results from Plasmid DNA assay**

Longyi SHAO<sup>1)</sup>, Zongbo SHI<sup>1</sup>, T. P. Jones<sup>2)</sup>, Jinjuan LI<sup>1)</sup>, A. G. Whittaker<sup>2)</sup>, K. A. Bérubé<sup>2)</sup>

1) Earth Sciences, China University of Mining and Technology, Beijing, 100083;

2) Cardiff University, CF10, 3YE, UK; E-mail: shaoL@cumtb.edu.cn

### **Characterization of Plant Wax n-Alkanes in Aerosols in Beijing during Spring Dust Storm Period**

Hong LI<sup>1\*</sup>, Longyi SHAO<sup>2</sup>, Zongbo SHI<sup>3</sup>, Tao HE<sup>4</sup>

<sup>1</sup> Chinese Research Academy of Environmental Sciences, Beijing 100012, China

<sup>2</sup>Earth Sciences, China University of Mining & Technology, Beijing 100084, China

<sup>3</sup>JSPS Fellow, Prefectural University of Kumamoto, Kumamoto 862-8502, Japan

<sup>4</sup>Hunan University of Science and Technology, Xiangtan, 411201, China

#### **Development of Lidars for Dust Monitoring Network**

Ichiro MATSUI<sup>1</sup>, Nobuo SUGIMOTO<sup>1</sup>, Atsushi SHIMIZU<sup>1</sup>

National Institute for Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki, 305-8506, Japan

#### **Enhancement of Mite Allergen-Induced Eosinophil Infiltration in the Murine Airway and Local Cytokine/Chemokine Expression by Asian Sand Dust**

Takamichi ICHINOSE<sup>1</sup>, Kaori SADAKANE<sup>1</sup>, Hirohisa TAKANO<sup>2</sup>, Rie YANAGISAWA<sup>2</sup>, Masataka NISHIKAWA<sup>2</sup>, Ikuko MORI<sup>2</sup>, Kyoko HIYOSHI<sup>3</sup>, Hideyuki SHIMIZU<sup>2</sup>

<sup>1</sup> Oita University of Nursing and Health Sciences, Oita, Japan.

<sup>2</sup> National Institute for Environmental Studies, Ibaraki, Japan.

<sup>3</sup> Ishikawa Prefectural Nursing University, Ishikawa, Japan.

#### **Evaluation of the Technologies and Activities for Control Desertification in China**

Guo Yu QIU<sup>1,2</sup>, Hideyuki SHIMIZU<sup>2</sup>, Jing YIN<sup>1</sup>, Peijun SHI<sup>1</sup>, Yong GAO<sup>3</sup>

<sup>1</sup> College of Resources Science and Technology, Beijing Normal University, Beijing 100875, China

<sup>2</sup> National Institute for Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki, 305-8506, Japan

<sup>3</sup> Inner Mongolia Agricultural University, Hohhot 010019, China

#### **Influence of *Salix psammophila* Checkerboard on Wind-sand Flux and Soil Physical and Chemical Properties.**

Yong GAO<sup>1</sup>, Hideyuki SHIMIZU<sup>2</sup>, Guo Yu QIU<sup>2,3</sup>, Ji WANG<sup>1</sup>, Jian WANG<sup>1</sup>

<sup>1</sup> Inner Mongolia Agricultural University, Hohhot 010019, China <sup>2</sup> National Institute for Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki, 305-8506, Japan <sup>3</sup> College of Resources Science and Technology, Beijing Normal University, Beijing 100875, China

#### **Lidar Observation and Characterization of a Heavy Dust Event in Beijing Area**

Xuhui Dong<sup>1</sup>, Yanping Chen<sup>1</sup>, Shuli Zhao<sup>2</sup>, Hui Qi<sup>1</sup>, Lijun Ren<sup>1</sup>, Yanpeng Wang<sup>1</sup>, Nobuo Sugimoto<sup>3</sup>, Masataka Nishikawa<sup>3</sup>, Kazuhiko Sakamoto<sup>4</sup>, Qingyue Wang<sup>4</sup>

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3.National Institute for Environmental Studies, Japan.

4. Saitama University, Japan.

#### **Main Problem Faced and Relevant Countermeasure during the Environment Protection Work in Desertification Rural Areas in China**

Han Yongwei, Gao Jixi, TuoXuesen

Institute of Ecology, Chinese Research Academy of Environmental Sciences, Beijing, 100012

#### **Studies on Development Trend of Grassland Desertification and Its Influencing Factors in**

### **Hulunbeir Steppe**

LV Shi-Hai, GAO Ji-Xi (*Ecological Environment Institute of Chinese Research Academy of Environmental Sciences, Beijing 100012, China*)

### **Study on Vertical Distribution Characteristics of Ultrafine Particles in Dust Storm Period over North China Coastal Areas by High Time-Space Resolution Aircraft Measurement in the Spring of 2006**

Wei Wang<sup>1\*</sup>, Xiaoyu Liu<sup>1</sup>, Jianzhong Ma<sup>2</sup>, Yue Chen<sup>2</sup>, Dandan Xu<sup>1,3</sup>, Hongjie Liu<sup>1</sup>, Zongshuang Wang<sup>1</sup>, Hong Li<sup>1</sup>, Chunmei Geng<sup>1</sup>

<sup>1</sup>Chinese Research Academy of Environmental Sciences, Beijing 100012, China

<sup>2</sup>Chinese Academy of Meteorological Sciences, Beijing 100081, China,

<sup>3</sup>China University of Mining & Technology, Beijing 100084, China,

### **Study on the Relation between Soil Nutrient and Physical Characteristics of the Different Communities in Reclaimed Land of Coal Mine**

ZHANG Shu-li Inner Mongolia Academy of Environmental Science, Hohhot 010010