



Final Program

**The 4th CSA-IAA Conference on
Advanced Space Technology**

“Advanced Space Technology benefits for Humanity”

September 5-8, 2011

Shanghai, China

CONTENTS

| | |
|-------------------------|----|
| Aim of the Conference | 1 |
| Conference Venue | 1 |
| Working language | 1 |
| Session Facilities | 1 |
| Author's Information | 1 |
| Main Topics | 1 |
| Conference Organization | 2 |
| Conference Agenda | 4 |
| Welcome Reception | 5 |
| Technical Visit | 11 |
| Notes | 11 |

AIM OF THE CONFERENCE

The Chinese Society of Astronautics (CSA) and the International Academy of Aeronautics (IAA) are pleased to hold jointly the 4th CSA-IAA Conference on Advanced Space Technology from Sept. 5 to 8, 2011. The conference would provide a forum for the presentation and discussion of the following topics to explore the application and development of advanced space technology under the theme of "Advanced Space Technology benefits for Humanity".

CONFERENCE VENUE

The Conference will be held in Shanghai, At Grand Soluxe Zhongyou Hotel Shanghai.

Address: No.969 Dongfang Road, Pudong New Area, Shanghai

Tel: 86-21-68758888

www.hotelzhongyou.com

WORKING LAUGUAGE

English will be the working language of the conference.

SESSION FACILITIES

LCD projectors and computer for Powerpoint presentation will be available in all meeting rooms. The electricity in China is supplied at 220V, 50Hz AC.

AUTHOR'S INFORMATION

Normally 25-minute presentation plus 5-minute Question and Answer for Plenary Session (keynote speech).

5-10 minute presentation plus 5-minute Question and Answer for Technical Sessions.

MAIN TOPICS

1. Applications of Communications Satellite
2. Applications of Remote Sensing Satellite
3. Applications of Navigation Satellite
4. Satellite and Launcher Technology
5. Space Policy and International Cooperation
6. Commercialization of Satellite Applications

CONFERENCE ORGANIZATION

Hosted by

Chinese Society of Astronautics (CSA)

International Academy of Astronautics (IAA)

Supported by

China National Space Administration (CNSA)

Chinese Academy of Sciences (CAS)

China Aerospace Science and Technology Corporation (CASC)

China Aerospace Science and Industry Corporation (CASIC)

Sponsored by

China Academy of Launch Vehicle Technology (CALT)

China Academy of Space Technology (CAST)

Shanghai Academy of Spaceflight Technology (SAST)

China Aerospace Science & Industry Academy of Information Technology

Defense Technology Academy of China Aerospace Science & Industry Corporation

Feihang Technology Research Academy of China Aerospace Science & Industry Corporation

China Center for Resources Satellite Data and Application (CRESDA)

China Satellite Communications Co. Ltd

Shanghai Society of Astronautics (SSA)

General Chairmen

Prof. MA Xingrui (President, CSA and CASC)

Dr. Jean-Michel CONTANT (Secretary General, IAA)

Local Organizing Committee

Chairman

YUAN Jie (Vice President, CSA and CASC)

Vice Chairmen

XIE Lianggui (Vice President of CSA and General Manager Assistant of CASIC)

ZHU Zhisong (President, SAST)

YANG Junhua (Vice President and General Secretary, CSA)

Members

FU Min (Deputy Division Director, President Office of CASC)

WANG Yan (Deputy Division Director, Research and Development of CASC)

GUO Jianping (Deputy Division Director, International and Cooperation of CASC)
WANG Xianyu (Deputy Division Director, President Office of CASIC)
WANG Guoqing (Vice President, CALT)
WANG Yanguang (General Engineer, CAST)
MENG Guang (Vice President, SAST)
LU Weining (President, China Aerospace Science & Industry Academy of Information
Technology)
LIU Zhuping (Vice President, Defense Technology Academy of China Aerospace
Science & Industry Corporation)
WEI Yiyin (Vice President, Feihang Technology Research Academy of China Aerospace
Science & Industry Corporation)
XU Wen (Director, CRESDA)
YAO Fahai (Vice President, China Satellite Communications Co. Ltd)
GONG Jinyu (Deputy General Secretary, CSA)

International Program Committee

Rainer SANDAU, IAA
CAI Guobiao, CSA
Yean Joo CHONG, IAA
CUI Pingyuan, CSA
Efim MALITIKOV, IAA
Fillppo GRAZIANI, IAA
LI Ming, CSA
MENG Guang, CSA
WANG Guoqing, CSA
WANG Yanguang, CSA

CONFERENCE AGENDA
MONDAY, SEPTEMBER 5, 2011

14:00-20:00 Registration

at the lobby of the conference venue

TUESDAY, SEPTEMBER 6, 2011

09:00-09:20 Opening Ceremony

Sunshine Hall, 5th floor

Chairperson: Prof. YANG Junhua

Opening Addresses from:

1. Prof. LIU Bo (Deputy Secretary General of Secretariat, CNSA)
2. Dr. Jean-Michel CONTANT ((Secretary General, IAA)
3. Prof. YUAN Jie (Vice President, CSA and IAA)
4. Prof. XIE Lianggui ((Vice President, CSA and Assistant General Manager of CASIC)

09:20-09:30 Certificate Ceremony of Newly Elected Chinese IAA Academician 2011

09:30-12:00 Plenary Session

Sunshine Hall, 5th floor

Co-Chairmen: Dr. Rainer SANDAU, Germany Prof. WANG Yanguan, China

- 09:30-10:00 Keynote speech from CASC, Mr. LIU Qiang (Division Director, Research and Development of CASC)
- 10:00-10:30 The New Orientations of the International Academy of Astronautics after the 2010 Heads of Space Agency Summit (Dr. Jean-Michel CONTANT, General Secretary of IAA)
- 10:30-11:00 Space Science Missions in the Next 5 Years and Medium Plan till 2020, Mr. WU Ji (Director, National Space Science Center, CAS)
- 11:00-11:30 Effectiveness of the Satellite Utilization for Disasters, regarding to the Great East Japan Earthquake, Mr. Jun GOMI (Director of Space Applications Promotion Center, JAXA)
- 11:30-12:00 Some Considerations and Suggestions on the Development of Small Satellite and Its Application Systems, Mr. LU Weining (President, China Aerospace Science & Industry Academy of Information Technology)

Break

14:00-18:00 Plenary Session

Sunshine Hall, 5th floor

Co-chairmen: Dr. Jean- Michel CONTANT, France Prof. MENG Guang, China

- 14:00-14:30 Chinese Meteorological Satellite Application in Disaster Prevention and Mitigation, Prof. MENG Guang (Vice President of SAST)
- 14:30-15:00 The IGMASS Project – New Approach to Natural and Man-made Disaster Management Issues, Prof. Valery A. MENSNIKOV (Vice Chair of IGMASS' System Project)
- 15:00-15:30 Remote Sensing and Earth Observation with Micro Satellites - Status and prospects, Dr. Rainer SANDAU (Technical Director, IAA)
- 15:30-16:00 The China Land Observation satellites and related remote sensing application under the framework of spatial Information Infrastructure, Prof. XU Wen (Director, CRESDA)
- 16:00-16:30 China-Satcom is Moving Ahead, Prof. YAO Fahai (Vice President of China Satellite Communications Co. Ltd)
- 16:30-17:00 Present and Future of Chinese Long March Vehicles, Prof. Peng Xiaobo (Director, Research and Development Division of CALT)
- 17:00-17:30 Progress and Prospect of China Deep Space Exploration, Prof. LI Ming (Vice president of CAST)
- 17:30-18:00 Advanced Space Technologies of the 21st Century for the Ancient Cultures, Prof. Efim MALITIKOV (Interstate Committee of CIS on Knowledge Promotion and Adult Education, International Association "Znanie", President , Russia)

19:00-20:30 WELCOME RECEPTION

Sunshine Hall, 5th floor

WEDNESDAY, SEPTEMBER 7, 2011

Technical Sessions (3 parallel sessions with 6 topics)

08:30-12:00 Technical Sessions: Session 1, Session 2 and Session 3

14:00-18:00 Technical Sessions: Session 1 and Session 2

| Time | Location | Session No. |
|-------------|--|----------------|
| 08:30-12:00 | No.1 Multifunction Hall, 2 nd floor | Session 1 (S1) |
| 08:30-12:00 | View Ballroom, 31 st floor | Session 2 (S2) |
| 08:30-12:00 | No.3 Multifunction Hall, 2 nd floor | Session 3 (S3) |
| 14:00-18:00 | No.1 Multifunction Hall, 2 nd floor | Session 1 (S1) |
| 14:00-18:00 | View Ballroom, 31 st floor | Session 2 (S2) |

08:30-12:00, September 7, 2011

Session 1 – Satellite Space Applications

No.1 Multifunction Hall, 2nd floor

Co-chairmen: Prof. Efim Maltikov, Russia Porf. WANG Yanguang, China

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|--------------|---|--------------------|
| S1-01 | Global seismic activity monitoring space system | A. Makarov |
| S1-02 | The application of infrared remote sensing technology for earthquake disaster reduction | BAO Yunfei |
| S1-03 | Monitoring Wenchuan earthquake disaster based on domestic CBERS-02/02B data | CHEN Junying |
| S1-04 | Recent Progress of Terahertz Technologies and the Impetus to Terahertz Satellite Communications | DONG Shiwei |
| S1-05 | The Development and Application of Satellite Mobile Communication System | FENG Xuan |
| S1-06 | Recent development of uncooled IR remote sensing technique | HAN Xiao |
| S1-07 | The application of domestic moderate resolution satellite data in China land use macroscopic monitoring | HUANG Shicun |
| S1-08 | Theoretical Modeling for Polarimetric Scattering and Information Retrieval of SAR Remote Sensing/Progress of Active and Passive Microwave Remote Sensing for Lunar Exploration in FDU | JIN Yaqiu |
| S1-09 | Study of Airborne Precise Navigation of Satellites / Celestial / Inertial Combination | JING Chao |
| S1-10 | Tele-epidemiology : which contribution for Earth Observation satellite data | Jean-Pierre LACAUX |
| S1-11 | The Research of Connection Admission Control in Satellite ATM Switching System | LI Jingling |
| S1-12 | A realization model of the satellite-based ATM multicast signaling system | LI Jun |
| S1-13 | Testing NPP CrIS and ATMS retrieval algorithm using proxy data generated from MetOp-A observations | LIU Xu |
| S1-14 | World university of a new type without language, national and cultural borders | Efim MALITIKOV |
| S1-15 | Opportunities and Challenges on the Creation of a Remote Sensing Center for Sustainable Development and Disaster Management: Cameroon-Case of Emerging Nations | Yury N RAZOUMNY |

14:00-18:00, September 7, 2011

Session 1- Satellite Space Applications

No.1 Multifunction Hall, 2nd floor

Co-chairmen: Dr. Rainer SANDAU, Germany Prof.WANG Yanguang, China

| | | |
|--------------|---|-------------------|
| S1-16 | Application of Frequency Diversity Technique in Space Debris Detection | SHANG She |
| S1-17 | The Power Allocation and Efficiency of Carriers in Satellite Communication | SI Shengping |
| S1-18 | Design and implementation of CBOC receiver based on DE method | SUN Zhongqiu |
| S1-19 | 1036-nm Single Photon Laser Ranging System with Active Quenching Si-APD | TAN Tianle |
| S1-20 | A GIS-based Road Information System of Agartala City/ A GPS-based Real-time Road Traffic Monitoring System | Kamal Kumar TANTI |
| S1-21 | A simple robust on-board calibration method for fully polarimetric microwave radiometer | WAN Guoyu |
| S1-22 | SCPS-TP Relay Design and Test | WANG Chunfeng |
| S1-23 | A user-oriented interoperability receiver platform for Multi-system and Multi-constellation | WANG Qianxi |
| S1-24 | The construction progress and international cooperation prospect of GLONASS system | WU Qingcai |
| S1-25 | Primary Design of Millimeter and Sub-millimeter Wave Sounder for GEO Meteorological Satellite | XIAO Hui |
| S1-26 | Tiny adjust method of contour gain of shaped reflector antenna | XIE Sulong |
| S1-27 | Design and Application of Multifunction Terminal for Emergency Disaster Rescue Based on COMPASS | YU Nengjie |
| S1-28 | Research of Indoor/Outdoor seamless positioning method applicating for public security | ZHAI Yujia |
| S1-29 | Satellite remote sensing in environmental disaster monitoring and forecast application | ZHAO Qichang |
| S1-30 | Using satellite data for climate monitoring | Daniel K ZHOU |

08:30-12:00, September 7, 2011

Session 2- Satellite and Launcher Technology

View Ballroom, 31st floor

Co-chairmen: Prof. CHEN Jie, China Prof. Filippo GRAZIANI, Italy

| | | |
|--------------|---|--------------------|
| S2-01 | A University Platform for Biomedical Experiments on Space | Chantal CAPPELLETI |
| S2-02 | The Key Technologies Study for Test of the Next Generation Telecommunication Satellite | CHEN Yue |
| S2-03 | Research on the Technology of A Reusable Near-Space Hypersonic Vehicle | DU Xin |
| S2-04 | Past and Future of Space Solar Power System | GAO Ji |
| S2-05 | Study on Degradation in Triple-Junction GaAs Solar Cells by MEO Radiation Environment | GAO Xin |
| S2-06 | Research on the novel non-pyrotechnic connection and separation device for micro-satellite | HU Xingzhi |
| S2-07 | Performance research of coupled active thermal control systems of spacecrafts assembled with several modules | JIN Jian |
| S2-08 | Progress of carbon/carbon-silicon carbide space mirrors technology | LI Jin |
| S2-09 | The Preliminary Concept about Gasbag Impelled by Light Pressure | LI Yue |
| S2-10 | Maritime Precision Evaluation Method Based on Differential GPS Technology for Space Tracking Ships | LI Xiaoyong |
| S2-11 | Application Analysis of ATR Engine in Vehicles with Broad Flight Envelopes | LI Ping |
| S2-12 | Attitude Dynamics and Control of the Satellite Considering Antenna Pointing | LIU Likun |
| S2-13 | A Non-linear PID Control Method of Pure Gravity Orbit Spacecraft | LIU Shuai |
| S2-14 | Integrated Adaptive Guidance and Control Design for BTT Vehicles | MENG Bin |
| S2-15 | THE DESIGN OF A SUPERCONDUCTIVITY MAGNETORQUER | MENG Lifei |

14:00-18:00

Session 2 – Satellite and Launcher Technology

View Ballroom, 31st floor

Co-chairmen: Prof. CHEN Jie, China Prof. NI Maolin, China

| | | |
|--------------|--|--------------------|
| S2-16 | Autonomous Navigation Algorithm for Sun Pointing Slow-Spin Probe in Earth-Lunar Transfer Orbit Based on Ultraviolet Sensors | QIAO Guodong |
| S2-17 | Simulation of High-Energy Proton Induced Internal Dielectrics Charging | QIN Xiaogang |
| S2-18 | Application of High-Power and High efficiency Grid Connecting power Supply Technology to large-scale Spacecraft | REN Xiaoqiang |
| S2-19 | The Development of the SpaceLiner Concept and its Latest Progress | Tobias SCHWANEKAMP |
| S2-20 | Image Navigation and Registration Scheme of the Second Generation Geostationary Meteorological Satellite of China | SHEN Yili |
| S2-21 | The Current Situation and Development of Inflatable Array Antennas | SHENG Dongdong |
| S2-22 | Power Supply System for Next Generation Remote-sensing Satellite | SHI Jiahao |
| S2-23 | Development of Oxygen-Kerosene LRE Family Based on Proven Technologies | V.N. SHNYAKIN |
| S2-24 | the Performance of Inflatable Aerodynamic Decelerators and the Influence of Structural Parameters and Angle-of-Attack on its Capability | WANG Yang |
| S2-25 | Impact Area Delineation for Carrier Rocket's First Debris Based on Separation Point States | WANG Hui |
| S2-26 | Effects of ion beam discharge voltage on microstructures and optical properties of Al ₂ O ₃ thin films by oxygen ion beam assisted pulse reactive magnetron sputtering | WANG Jinxiao |
| S2-27 | Studies on the Space Application of Water Based Rocket Propulsion System | WANG Changhui |
| S2-28 | Low-Cost, Rapid University Micro-Satellite Platform for Space Experiment | WANG Xinsheng |
| S2-29 | A Simple Least-Squares Algorithm for Three-axis Gyroscope Calibration with Single Vector Measurements | WEI Yi |

| | | |
|--------------|---|----------------|
| S2-30 | Research for AIT Technology for Multi-function Orbital Service Vehicle Based on the Modularized Design | XIONG Xiaoying |
| S2-31 | Computational Mission Analysis and Conceptual System Design for Super Low Altitude Satellite | XU Ming |
| S2-32 | spacewire enabled spacecraft platform/payload built around spw-rtc – spacewire remote terminal controller | YU Guoxia |
| S2-33 | Research on a new method of deployment latch-up impact loads analysis for solar arrays | ZHANG Zhijuan |
| S2-34 | Study on Vacuum Outgassing Characteristics of Thermal Conductive Silicon Grease | ZHANG Yanjing |
| S2-35 | Research on Algorithm of One changed Singularity and Robust Pseudo-inverse Steering Law for SGCMGs | ZHANG Shuyu |
| S2-36 | A conception of the Ionospheric Weather Monitoring Small Satellite System | ZHOU Yu |

08:30-12:00, September 7, 2011

Session 3- International Cooperation, Commercialization

No.3 Multifunction Hall, 2nd floor

Co-chairmen: Prof. Yean Joo CHONG, Singapore Prof. GAO Xiaoyang, China

| | | |
|--------------|---|-------------------|
| S3-01 | The Utilization of Satellites to Collect Solar Radiation and Transmitting Electricity to Earth | Yean Joo CHONG |
| S2-02 | Satellite Spectrum Resources and Application Procedures | GAO Xiaoyang |
| S3-03 | International Collaboration Strategy of Space Station | LI Jingtao |
| S3-04 | An international policy for sustainable space exploration | Tanay SHARMA(4.6) |
| S3-05 | International collaboration - A cornerstone for future space exploration | Tanay SHARMA |
| S3-06 | Satellite communication development and application in China | TANG Zuoxiang |
| S3-07 | Development and Application of Concurrent Satellite Design in the Frame of an International Cooperation | WU Ruilan |
| S3-08 | Social Practice Promoting Astronautical Technology Innovation Development Based on the Opportunity of Shanghai EXPO | ZHAO Jincai |

THURSDAY, SEMTEMBER 8, 2011

08:00-12:00 Technical Visit to SAST

A half-day technical visit to Shanghai Academy of Spaceflight Technology (SAST) including Shanghai Aerospace Equipment Manufacturer, Shanghai Institute of Satellite Engineering and Shanghai Solar Energy Research Center will be organized in the morning from 08:00 to 12:00 of Sept. 8, 2011. Transportation will depart from the conference hotel at 08:00. Please participant who has registered the technical visit in advance gather at the lobby at 07:30. Please foreign participants bring your passport for the technical visit. The transportation will return back the conference hotel after the technical visit. Meeting adjourned.

NOTES

1. Please wear the name badges all the time during the Conference in order to be admitted to the opening ceremony, reception, plenary session, technical sessions and technical visit. Tea break will be provided outside the conference room.
2. The simultaneous interpretation facility is provided for the Opening ceremony and Plenary Session on September 6, 2011, please kindly remain the earphone on the table after use.