

The 8th International Congress on Industrial and Applied Mathematics Convenes in Beijing

More than 3,100 mathematicians from over 70 countries and regions gathered in Beijing in August to celebrate the 8th International Congress on Industrial and Applied Mathematics (ICIAM).

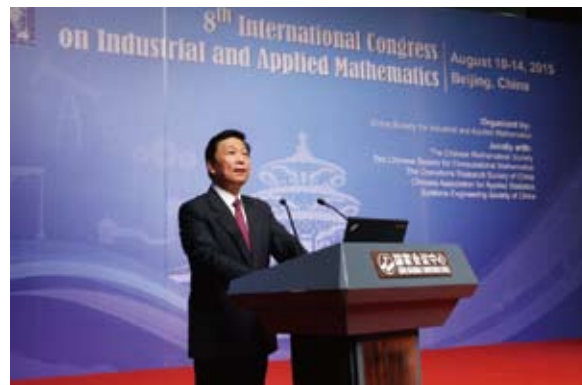
During the week-long conference at the China National Convention Center inside the Beijing Olympic Green, participants enjoyed more than 600 parallel mini-symposia, 27 invited lectures as well as special lectures and poster sessions, to get to know the cutting-edge development in their field and talk to colleagues from across the world.

At the meeting's opening ceremony on August 10, Chinese Vice President LI Yuanchao addressed the inauguration of the conference, extending his warm welcome to scientists, industrial experts, and delegates alike on behalf of the Chinese government and congratulating the ICIAM Prize recipients.

"The extensive application of mathematics has become a vital driving force for the development of our world," LI said.

Winners of the ICIAM prizes for 2015 included Annalisa Buffa from the Institute for Applied Mathematics and Information Technologies of Italy, Andrew J. Majda of the Courant Institute at New York University, Jean-Michel Coron of the Université Pierre et Marie Curie, Björn Engquist of the University of Texas at Austin, and Li Tatsien from Fudan University, Shanghai.

As a premier international congress in the field of applied mathematics, ICIAM is held every four years under the auspices of the International Council for Industrial and Applied Mathematics. Since the first ICIAM in Paris



meeting, it has become a grand gathering of the highest level, largest scale, and with the most extensive influence of its kind for industrial and applied mathematicians around the world.

ICIAM 2015 marked the first time the meeting is convened in an Asian/developing nation. The next ICIAM conference will be held in Valencia, Spain in 2019.

China, ESA to Jointly Explore Space Weather

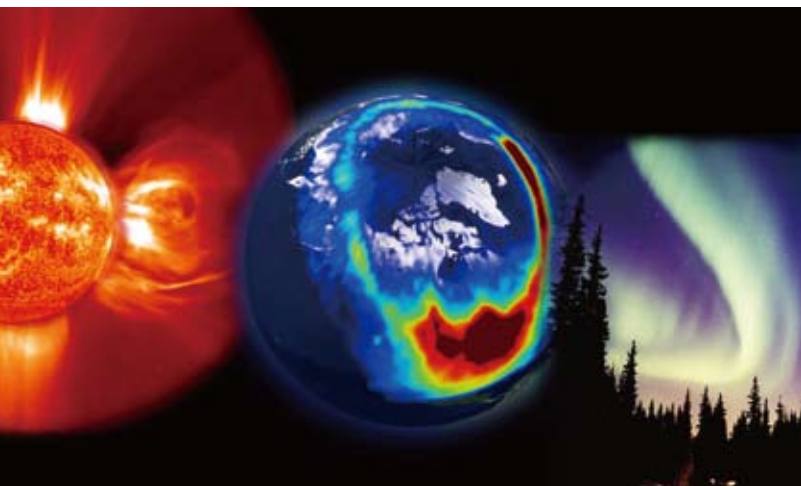
European and Chinese scientists have recommended the Solar-wind Magnetosphere Ionosphere Link Explorer (Smile) as their candidate for a collaborative science mission for launch in 2021.

'Smile' will investigate the interaction between the Earth's protective shield—the magnetosphere—and the supersonic solar wind. The mission is expected to make an important contribution to our understanding of space weather and, in particular, the physical processes taking

place during the continuous interaction between the solar wind and the magnetosphere.

Smile would be launched into a highly inclined, elliptical orbit that would take it almost a third of the way to the Moon. From this orbit it would be able to make continual observations of key regions in near-Earth space.

These would include simultaneous images and movies of the magnetopause (the boundary between Earth's magnetosphere and the solar wind), the polar cusps (two



regions, one in each hemisphere, where solar wind particles have a direct access to Earth's ionosphere), and the auroral oval (the region around each geomagnetic pole where auroras most often occur).

X-ray and ultraviolet imagers are proposed to study global distributions of auroras, along with instruments to measure the energetic particles in the solar wind, and changes in the local magnetic field.

This joint venture between ESA and China follows on from the success of the Double Star/Tan Ce missions that provided multipoint measurements of near-Earth space from 2004 to 2008, working in concert with ESA's Cluster satellites.

However, it will be the first time that ESA and China jointly select, design, implement, launch and operate a space mission.

The latest initiative began with two workshops in China and Europe. ESA's Directorate of Science and Robotic Exploration and the National Space Science Center (NSSC) under the Chinese Academy of Sciences (CAS) then issued a joint call for proposals in January this year.

A total of 13 proposals, covering a range of topics in astrophysics, heliophysics and fundamental physics, were received. Following a joint peer review process carried out by the scientific communities of Europe and China, with the support of ESA and CAS, Smile was identified as the top candidate.

The Principal Investigators are Graziella Branduardi-Raymont from Mullard Space Science Laboratory, University College London, UK, and WANG Chi from the State Key Laboratory of Space Weather, NSSC, CAS.

A preliminary study will now assess the proposal, prior to beginning the formal selection process in autumn.

After the official go-ahead has been given to Smile, it will enter a two-year study phase, followed by a four-year implementation phase, aiming for launch in 2021.

The payload and satellite will be provided by scientists and industry from both Europe and China. The mission will be implemented by ESA's Science Programme and NSSC, CAS. (Based on ESA news release)

CAS Scientists Recognized For Innovation on Superconducting Materials

Two physicists from CAS have received the 2015 Bernd T. Matthias Prize for Superconducting Materials, one of the highest international prizes awarded for innovative contributions to the field.

CHEN Xianhui from the University of Science and Technology of China and ZHAO Zhongxian from the Institute of Physics received their certificates of honor on August 24 at the 11th International Conference on Materials and Mechanisms of Superconductivity in Geneva, Switzerland.

CHEN was recognized for his "discovery of $(\text{Li,Fe})\text{OHFe}(\text{Se,S})$, $\text{Ybx}(\text{Me})\text{HfNCl}$ ($\text{Me} = \text{NH}_3$ and THF), and





doped phenanthrene, broadening the material base for superconducting studies,” and ZHAO for the “discovery of RE(O,F) and (RE)O_{1-x}FeAs (RE = rare earth) with a T_c up to 55 K, demonstrating the limit of T_c in bulk Fe-based superconductors.”

They shared this year’s award with Zachary Fisk from the University of California-Irvin. It is the first time Chinese scientists begged this prize. The two also made presentations after the awarding ceremony.

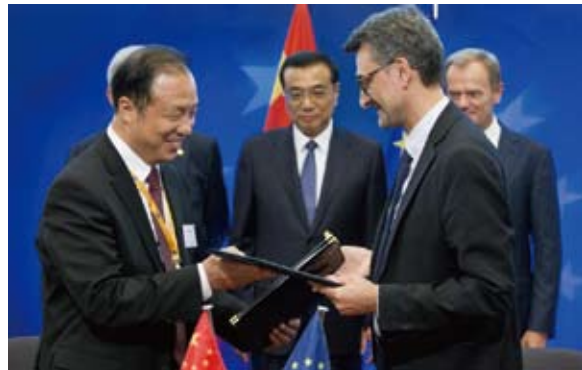
The Bernd T. Matthias Prize was created in 1989 by friends and colleagues of Bernd T. Matthias, a German-born physicist who immigrated to the United States in 1947 and is noted for his discovery of nearly 1,000 superconducting materials. Since 2000, the Prize has been sponsored by the Texas Center for Superconductivity at the University of Houston, whose founding director, Paul C. W. Chu, was Matthias’ former student. The Prize consists of 6,000 US dollars and a certificate.

China, Europe to Enhance Collaboration in Earth Observation and Digital Earth

A collaborative research agreement was signed between the Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Sciences and the European Commission Joint Research Centre (JRC) at the EU Council headquarters in Brussels on June 29, 2015 in a bid to boost bilateral cooperation in Earth Observation and Digital Earth.

According to the agreement, the two parties will join hands to address global challenges such as sustainable development, climate action and disaster risk reduction using Earth Observation technologies. Cooperation will be carried out in six specific fields: global human settlements analysis, digital earth platform construction, land and soil degradation monitoring, air quality monitoring, land cover mapping and agricultural monitoring. Collaborative activities will take the form of data and information exchange, joint working groups and joint training programs and so on.

The RADI-JRC agreement was listed in the 17th China-EU Summit joint statement as one of the major outcomes of the meeting. The agreement was inked by RADI director GUO Huadong and JRC director general Vladimir Šucha at the Summit with the witness of Chinese Premier LI Keqiang, President of the European Council Donald Tusk and President of the European Commission Jean-Claude



Juncker.

At the 2nd China-EU Innovation Cooperation Dialogue held on the same day, GUO delivered a talk to brief on the development of Earth observation and Digital Earth in China and envision the future for SINO-EU cooperation in the field.

JRC is the European Commission's in-house science service which employs scientists to carry out research and provide independent scientific advice and support to EU policy. Its partnership with RADI can be dated back to more than a decade ago.