### Conference Schedule

<table>
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<tbody>
<tr>
<td>Time</td>
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<tr>
<td>9:00–10:00</td>
<td>Opening Ceremony</td>
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<td>9:00–10:30</td>
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<tr>
<td></td>
<td>Keynote: Maggie Tolbert</td>
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<td>Keynote: Hajime Akimoto</td>
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<tr>
<td>10:00–10:30</td>
<td>Guest Speaker: Yuan Tseh Lee</td>
<td>9:30–10:30</td>
<td>9:30–10:30</td>
<td>9:30–10:30</td>
<td>9:30–10:30</td>
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<tr>
<td></td>
<td>Session 1: AC &amp; People</td>
<td>Session 2: AC &amp; People</td>
<td>Session 3: AC &amp; Ecosystems</td>
<td>Session 4: AC &amp; Climate/Weather</td>
<td>Session 5: Challenging the Future</td>
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<tr>
<td>11:15–12:15</td>
<td>Lunch</td>
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<tr>
<td>12:30–14:00</td>
<td>Lunch</td>
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<td>Closing Ceremony</td>
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<tr>
<td>14:00–15:30</td>
<td>Lunch</td>
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<tr>
<td>15:30–16:15</td>
<td>Coffee Break/Posters</td>
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<tr>
<td>16:15–17:30</td>
<td>Lunch</td>
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<tr>
<td>17:30–19:00</td>
<td>Welcome Social Hour</td>
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<tr>
<td>18:00–19:00</td>
<td>Social Hour/Posters</td>
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<tr>
<td>18:30–23:00</td>
<td>Conference Banquet &amp; Dance Party</td>
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</table>

### Titles of the Side Meeting

<table>
<thead>
<tr>
<th>Title of the Side Meeting</th>
<th>Day</th>
<th>Time</th>
<th>Room No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th International Workshop on Heterogeneous Kinetics Related to Atmospheric Aerosols</td>
<td>Sep. 24</td>
<td>9:00–18:00</td>
<td>Room 61</td>
</tr>
<tr>
<td>Chemistry Climate Model Initiative (CCMI)</td>
<td>Sep. 25</td>
<td>9:30–19:30</td>
<td>Room 54</td>
</tr>
<tr>
<td>IGAC Southern Hemisphere Working Group</td>
<td>Sep. 25</td>
<td>9:30–19:30</td>
<td>Room 61</td>
</tr>
<tr>
<td>AMIGA/IGAC project</td>
<td>Sep. 25</td>
<td>9:30–19:15</td>
<td>Room 62</td>
</tr>
<tr>
<td>COALA</td>
<td>Sep. 25</td>
<td>9:30–20:30</td>
<td>Room 61</td>
</tr>
<tr>
<td>IGAC Americas Working Group (Latin America and the Caribbean)</td>
<td>Sep. 25</td>
<td>9:30–20:30</td>
<td>Room 62</td>
</tr>
<tr>
<td>Global Emissions Initiative (GEIA)</td>
<td>Sep. 26</td>
<td>18:30–19:15</td>
<td>Room 54</td>
</tr>
<tr>
<td>PACES Town Hall</td>
<td>Sep. 26</td>
<td>18:30–19:30</td>
<td>Room 61</td>
</tr>
<tr>
<td>CSSP-China Project</td>
<td>Sep. 26</td>
<td>18:30–19:30</td>
<td>Room 63</td>
</tr>
<tr>
<td>TROPOMI Data User Workshop</td>
<td>Sep. 26</td>
<td>18:45–20:00</td>
<td>Room 62</td>
</tr>
<tr>
<td>Monitoring, Analysis and Prediction of Air Quality (MAP-AQ)</td>
<td>Sep. 26</td>
<td>19:30–20:30</td>
<td>Room 54</td>
</tr>
<tr>
<td>Cryosphere and Atmospheric Chemistry (CATCH)</td>
<td>Sep. 26</td>
<td>19:30–20:30</td>
<td>Room 61</td>
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<tr>
<td>Effect of Megacities on the transport and transformation of pollutants on the Regional and Global scales (EEmeGe)</td>
<td>Sep. 28</td>
<td>18:00–21:00</td>
<td>Room 54</td>
</tr>
<tr>
<td>IGAC-MANGO</td>
<td>Sep. 28</td>
<td>18:00–19:00</td>
<td>Room 61</td>
</tr>
<tr>
<td>Atmospheric Composition and the Asian Monsoon (ACAM)</td>
<td>Sep. 28</td>
<td>19:00–20:00</td>
<td>Room 61</td>
</tr>
<tr>
<td>Future Earth – China Working Group</td>
<td>Sep. 28</td>
<td>19:00–19:30</td>
<td>Room 62</td>
</tr>
<tr>
<td>Pollution in the Arctic: Climate, Environment and Societies – Working Group 1</td>
<td>Sep. 29</td>
<td>13:00–14:00</td>
<td>Room 54</td>
</tr>
<tr>
<td>Future Earth – who we are</td>
<td>Sep. 29</td>
<td>13:30–14:00</td>
<td>Room 61</td>
</tr>
</tbody>
</table>

### Conference Sponsors

- ICAGCP
- Japan National Committee
- JPSAC
- futurum
- TAMARU Corporation
- Takenasen Convention and Visitors Bureau
- Shimonoseki Science
- PICARRO
- ELEMENTA
- SHIMADZU Excellence in Science
- Nippon Thermo
- Panasonic
- MARKS Technologies
- Fujitsu
- MSS
- GAW
- International Science Council
- ISFE
- JAPAN AIRLINES
- atmosphere (in celebration of the first century of IUGG)

### Early Career Program Sponsors

- APN
- IASS
- IUGG
- INASM
- MANGO
- NIC
- Scientific Committee on Problems of the Environment
- Special Sponsor for Outreach Program
- Sunport Takamatsu
- Convention Center
- Tent Area
- IGAC SSC Sponsors

### Organizers

- Outrpach Program
- Special Sponsor for IGAC SSC Sponsors
- IGAC SSC Sponsors
Welcome to the 2018 joint 14th iCACGP Quadrennial Symposium and 15th IGAC Science Conference!

On behalf of the iCACGP–IGAC 2018 Local Organizing Committee (LOC), the IGAC–Japan National Committee (IGAC–Japan NC), and the Japan Society of Atmospheric Chemistry (JpSAC), we welcome all of you to Takamatsu, Kagawa, Japan for the 2018 joint 14th iCACGP Quadrennial Symposium and 15th IGAC Science Conference.

Together with the international launch of IGAC, under the Science Council of Japan, the IGAC–Japan National Committee was created in 1989 to oversee IGAC–related activities in Japan. The first epoch of the Japanese atmospheric chemistry activities in the early 1990s began with the organization of the “Joint Meeting on Global Atmospheric Chemistry (8th CACGP Symposium / 2nd IGAC Scientific Conference)” in Fuji Yoshida in September 1994. Through the evolution of the atmospheric chemistry community in Japan, JpSAC was officially established in 1999 in order to effectively address global environmental issues as well as to draw together scientists belonging to traditionally separate academic societies and offer them a forum for mutual exchange and discussions. Today, the IGAC–Japan NC and JpSAC have formed a cohesive Japanese atmospheric chemistry community that is strengthening its connections with the international community.

The Japan atmospheric chemistry community is delighted to be hosting the joint iCACGP Quadrennial Symposium and IGAC Science Conference 24 years later in Takamatsu, Kagawa, Japan. Since the 1994 joint CACGP Symposium and IGAC Science Conference, the Japan atmospheric chemistry community has grown both in the number of scientists as well as in the quality of its research. We are excited to welcome the international atmospheric chemistry community to Japan and share our strong science and culture with you.

We hope you enjoy the science while taking advantage of Takamatsu, an entrance city to Shikoku Island, one of Japan's foremost tourist destinations.

Sincerely,

Dr. Hiroshi Tanimoto
Chair of the LOC
IGAC Co–Chair
IGAC–Japan NC Chair
JpSAC Chair

Dr. Nobuyuki Takegawa
LOC Member
iCACGP Member

Dr. Tatsuya Nagashima
LOC Member
JpSAC Secretary

Dr. Michihiro Mochida
JpSAC Vice–Chair

Dr. Satoshi Inomata
LOC Member
IGAC–Japan NC Secretary

Dr. Toshinobu Machida
JpSAC Secretary
On behalf of the international Committee on Atmospheric Chemistry and Global Pollution (iCACGP) and the International Atmospheric Chemistry (IGAC) Project, it is our great pleasure to welcome all of you to the 2018 joint 14th iCACGP Quadrennial Symposium and 15th IGAC Science Conference, 25th to 29th of September 2018 in Takamatsu, Kagawa, Japan.

For the past sixty years, iCACGP has been supporting atmospheric chemistry research that contributes to solving the societal issues of air quality, water quality, food production, and human/ecosystem health and maintains the necessary disciplinary expertise in the natural sciences. Since 1990, IGAC has been fostering an international community, building scientific capacity, and providing intellectual leadership to deepen our understanding of atmospheric chemistry and address the most pressing global change and sustainability issues. Combined, iCACGP and IGAC have nearly nine decades of experience bringing together the international scientific community to address societal issues through scientific research, as the Anthropocene has evolved.

Since 1994, the iCACGP Quadrennial Symposium and the biennial IGAC Science Conference have been held jointly every four years. This joint international symposium and science conference is the primary way iCACGP and IGAC build cooperation and disseminate scientific information across its combined international community.

The 2018 joint 14th iCACGP Quadrennial Symposium and 15th IGAC Science Conference aims to:

- Bring together a broad representation of the international community of atmospheric scientists, from developed and developing countries.
- Spotlight cutting-edge scientific research related to atmospheric chemistry and its broader impacts.
- Foster and stimulate international scientific collaborations that will contribute towards solutions for the most pressing global change and sustainability issues.
- Cultivate the next generation of atmospheric scientists through its early career program.
- Celebrate the 60th anniversary of iCACGP.

We thank especially the Local Organizing, Scientific Program, and Early Career Program Organizing Committees for designing and organizing this ambitious and exciting week for the international atmospheric chemistry community.

We look forward to your participation in, and contributions to, the 2018 joint 14th iCACGP Quadrennial Symposium and 15th IGAC Science Conference.

With kind regards,

Prof. John P. Burrows FRS
iCACGP President

Dr. Melita Keywood
iCACGP Vice President

Prof. James R. Drummond FRSC
iCACGP Scientific Secretary

Dr. Mark Lawrence
IGAC Co-Chair

Dr. Hiroshi Tanimoto
IGAC Co-Chair

Dr. Megan L. Melamed
IGAC Executive Officer
Welcome to the 2018 joint 14th iCACGP Quadrennial Symposium and 15th IGAC Science Conference!

On behalf of the Scientific Program Committee (SPC) and the Early Career Program Organizing Committee (ECPOC), we welcome all of you to the 2018 joint 14th iCACGP Quadrennial Symposium and 15th IGAC Science Conference with the theme "Atmospheric Chemistry: From molecules to global impacts".

The conference includes five plenary sessions on Atmospheric Chemistry as it pertains to Human Activities, Ecosystems, Climate/Weather, Fundamental Understanding, and Future Challenges:

1. Atmospheric Chemistry & People
2. Atmospheric Chemistry & Fundamentals
3. Atmospheric Chemistry & Ecosystems
4. Atmospheric Chemistry & Climate/Weather
5. Challenging the Future

In addition to the scientific focus, throughout the week there will be many events for early career scientists to attend. The Early Career Program aims to foster professional relationships and collaborations among the next generation of researchers. The events will include:

- Special talk by Prof. Y.T. Lee entitled “Dare to be Different”
- Early career mixer
- Soft skills talks
- Early career excursion
- Lunch with established scientists
- Best early career oral and poster presentation competition

We welcome all of you to the plenary oral presentations and invite you to interact with over 700 participants, 290 of which are early career scientists, from 46 countries during the poster sessions and social events. We hope you enjoy the science and networking opportunities at the 2018 joint 14th iCACGP Quadrennial Symposium and 15th IGAC Science Conference.

We look forward to meeting all of you in Japan.

Sincerely,

Prof. Colette Heald
Co-Chair of the SPC

Dr. Melita Keywood
Co-Chair of the SPC

Dr. Kohei Sakata
Co-Chair of the ECPOC

Sakiko Ishino
Co-Chair of the ECPOC
Local Organizing Committee

Hiroshi Tanimoto (Chair), National Institute for Environmental Studies, Japan
Tatsuya Nagashima, National Institute for Environmental Studies, Japan
Satoshi Inomata, National Institute for Environmental Studies, Japan
Nobuyuki Takegawa, Tokyo Metropolitan University, Japan

Outreach Team: Thomas Sekiyama, JMA/MRI, Japan
Masahide Ishizuka, Toru Terao, Kagawa University, Japan

Social Events Team: Sachiko Okamoto, Kohei Ikeda, NIES, Japan

Website/Editing Team: Kimiko Suto, Edit Nagy-Tanaka, NIES, Japan

Administration Team: Naoko Sasaki, Norie Yamamoto, Mayu Kure, Mariko Ohashi, NIES, Japan

IGAC-Japan National Committee / JpSAC Committee

Hiroshi Tanimoto (Chair of IGAC-Japan NC and JpSAC), National Institute for Environmental Studies, Japan
Tatsuya Nagashima (Secretary of JpSAC), National Institute for Environmental Studies
Satoshi Inomata (Secretary of IGAC-Japan NC), National Institute for Environmental Studies
Tomoki Nakayama, Nagasaki University
Hitoshi Irie, Chiba University
Toshinobu Machida (Secretary of JpSAC), National Institute for Environmental Studies
Nawo Eguchi, Kyushu University
Atsushi Matsuki, Kanazawa University
Yasuko Kasai, National Institute of Information and Communications Technology
Kazuhide Matsuda, Tokyo University of Agriculture and Technology
Yugo Kanaya, Japan Agency for Marine-Earth Science and Technology
Jun Matsumoto, Waseda University
Yuzo Miyazaki, Hokkaido University
Jun-ichi Kurokawa, Asia Center for Air Pollution Research
Michihiro Mochida (Vice-Chair of JpSAC), Nagoya University
Naoko Saitoh, Chiba University
Yu Morino, National Institute for Environmental Studies
Thomas Sekiyama, Meteorological Research Institute, Japan Meteorological Agency
Shinji Morimoto, Tohoku University
Kenshi Takahashi, Kyoto University
Akihiro Yabushita, Kyushu University
Nobuyuki Takegawa, Tokyo Metropolitan University
Seiichiro Yonemura, National Institute for Agro-Environmental Sciences
Jing Zhang, Toyama University
Yoko Iwamoto, Hiroshima University
Sinichi Enami, National Institute for Environmental Studies
Sakae Toyoda, Tokyo Institute of Technology
Jun Hirokawa, Hokkaido University

Scientific Program Committee

Melita Keywood (Co-Chair), Commonwealth Scientific and Industrial Research Organisation, Australia
Colette Heald (Co-Chair), Massachusetts Institute of Technology, USA
Mary Barth, National Center for Atmospheric Research, USA
Paul Beukes, North-West University, South Africa
Gregory Frost, National Oceanic and Atmospheric Administration, USA
Michael Gauss, Norwegian Meteorological Institute, Norway
Sachiko Hayashida, Nara Women’s University, Japan
Nicolas Huneeus, University of Chile, Chile
Astrid Kiendler-Scharr, Forschungszentrum Jülich, Germany
Jesse Kroll, Massachusetts Institute of Technology, USA
Manish Naja, Aryabhatta Research Institute of Observational Sciences, India
Xuemei Wang, Sun Yat-sen University, China
Early Career Program Organizing Committee

Kohei Sakata (Co-Chair), National Institute for Environmental Studies, Japan
Sakiko Ishino (Co-Chair), Tokyo Institute of Technology, Japan
Maximilien Desservetaz, Commonwealth Scientific and Industrial Research Organisation, Australia
Manish Kumar, Banaras Hindu University, India
Andriannah Mbandi, University of York/SEI, UK
Zitely Tzompa-Sosa, Colorado State University, USA
Megan Willis, University of Toronto, Canada

2018 iCACGP Members

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Melita Keywood (Vice-President), Commonwealth Scientific and Industrial Research Organisation, Australia
James R. Drummond FRSC (Secretary), Dalhousie University, Canada
Maria de Fatima Andrade, University of Sao Paulo, Brazil
Mary Barth, National Center for Atmospheric Research, USA
Lucy Carpenter, University of York, UK
Franciscus J. Dentener, European Commission, and Joint Research Centre, Italy
Russell R. Dickerson, The University of Maryland, USA
Maria Cristina Facchini, Institute of Atmospheric Sciences and Climate, National Research Council, Italy
David W. Fahey, NOAA Earth System Research Laboratory, USA
Laura Gallardo Kleiner, Center for Climate and Resilience Research, Chile
Michael Gauss, Norwegian Meteorological Institute, Norway
Christian George, IRCLEYON, CNRS, France
Sergey Gromov, Institute of Global Climate and Ecology, Russia
Sachiko Hayashida, Nara Women's University, Japan
Shaw-Chen Liu, Jinan University, China, and Academia Sinica, Taiwan
Olga L. Mayol-Bracero, University of Puerto Rico, Puerto Rico
Paul S. Monks, University of Leicester, UK
Manish Naja, Aryabhata Research Institute of Observational Sciences, India
Stuart J. Piketh, North-West University Potchefstroom, South Africa
Nobuyuki Takegawa, Tokyo Metropolitan University, Japan
Geoffrey S. Tyndall, National Center for Atmospheric Research, USA
Clare Murphy (Paton-Walsh), University of Wollongong, Australia
J. Jason West, The University of North Carolina at Chapel Hill, USA
Caradee Y. Wright, South African Medical Research Council, South Africa
Renyi Zhang, Texas A&M University, USA
Yuanhang Zhang, Peking University, China
Mark Lawrence, Institute for Advanced Sustainability Studies, Germany
Oksana Tarasova, Natural Resources Canada, Canada
Mei Zheng, Peking University, China

2018 IGAC SSC Members

Mark Lawrence (Co-Chair), Institute for Advanced Sustainability Studies, Germany
Hiroshi Tanimoto (Co-Chair), National Institute for Environmental Studies, Japan
Paul Beukes, North-West University, South Africa
James Crawford, National Aeronautics and Space Administration, USA
Gregory Frost, National Oceanic and Atmospheric Administration, USA
Christian George, IRCLEYON, CNRS, France
Michel Grutter, Universidad Nacional Autónoma de México, Mexico
Colette Heald, Massachusetts Institute of Technology, USA
Judith Hoelzemann, Federal University of Rio Grande do Norte, Brazil
Alastair Lewis, University of York, UK
Clare Murphy (Paton-Walsh), University of Wollongong, Australia
Jennifer Murphy, University of Toronto, Canada
Manish Naja, Aryabhata Research Institute of Observational Sciences, India
Kim Oanh, Asian Institute of Technology, Thailand
Noureddine Yassa, Centre de Développement des Energies Renouvelables, Algeria
Mei Zheng, Peking University, China
Floor Map

3F
- Cloak
  - Grand Foyer
- Registration
  - Grand Foyer
- PC Preview Desk
  - Grand Foyer
- Exhibitions
  - Grand Foyer

4F
- Plenary & Oral Session
  - Main Hall
- Exhibitions
  - Grand Foyer

5F
- Side Meeting
  - Room 54
- Rest Room for Kids & Parents
  - Room 62
- Pray Room
  - Room 54
- Kids Activities Room
  - Room 63
- Backstage Room
  - Room 14
- Backstage Room
  - Room 15

6F
- Side Meeting
  - Room 61
- Side Meeting
  - Room 62
- Backstage Room
  - Room 16
- Poster (Session 2 & 4)
  - Small Hall 2

Hall Building
Information for Participants

1. General Information and Registration Desk

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 24</td>
<td>16:00–18:00</td>
<td>JR Hotel Clement Takamatsu 1F Lobby</td>
</tr>
<tr>
<td>September 25</td>
<td>8:00–17:00</td>
<td>3F Grand Foyer</td>
</tr>
<tr>
<td>September 26</td>
<td>8:00–17:00</td>
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<tr>
<td>September 27</td>
<td>8:00–11:30</td>
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<tr>
<td>September 28</td>
<td>8:00–17:00</td>
<td></td>
</tr>
<tr>
<td>September 29</td>
<td>8:00–11:30</td>
<td></td>
</tr>
</tbody>
</table>

- Please wear your name badge in a visible way whenever you are at the venue.
- You will not be allowed to enter the presentation room without your name badge.

2. Lunch & Coffee Break
- Lunch will be provided at Tent Area behind Sunport Takamatsu Convention Center from 12:30–14:00 on September 25, 26 and 28.
- Drink service will be provided during coffee break time at Poster Rooms of Sunport Takamatsu Convention Center.

3. Social Events

Welcome Social Hour
Date & Time: Tuesday, September 25          17:30–19:00
Place: 1F Poster Rooms, Sunport Takamatsu Convention Center

Social Hour
Date & Time: Wednesday, September 26     18:00–19:00
Friday, September 28           18:00–19:00
Place: 1F Poster Rooms, Sunport Takamatsu Convention Center

Conference Banquet & Dance Party
Date & Time: Thursday, September 27         18:30–23:00
Place: 3F Hiten & Tamamo Banquet Room, JR Hotel Clement Takamatsu
Special Features:
18:15–18:30 Welcome Live Music
18:30–18:45 “Shodo” Performance by Kagawa Pref. Takamatsu Commercial High School Calligraphy Club
21:00–23:00 Dance and Music Party with Swingin’ Wonderland JAZZ Orchestra

Excursion & Tours
Special Conference Excursion
Date & Time: Thursday, September 27 13:30–17:45
Ritsurin Garden & Seto Ohashi Memorial Park

Optional Tours
Date & Time: Saturday, September 29
Tour #1: Yashima & Shikoku Mura Museum (13:30–17:10)
Tour #2: Kotohira–gu Shrine (13:30–18:00)
Tour #3: Zentsu–ji Shrine & Chichibugahama Beach (15:00–19:30)

Outreach Program for Future Scientists
(Jointly supported by Kagawa Prefectural Government, Takamatsu City, Kagawa Prefectural Board of Education, and Takamatsu Preparatory School-Takayobi)
iCACGP-IGAC 2018 is committed to disseminating Atmospheric Chemistry to junior high- to high-school students and their teachers, and public sectors working on a variety of environmental issues. The following activities are offered.
- Listen to the Nobel Lecture!
- Meet the Earth Scientists!
- Scientists’ School Visit
- Science Café
4. Early Career Program
(Jointly sponsored by iCACGP, IGAC, JpSAC, Nagoya University / ISEE, NIES and APN)

• Early Career Scientists have the opportunity to attend the following events throughout the week of iCACGP–IGAC 2018.

• Please note that some events (4-2, 4-4, and 4-5) required pre-registration. If you would like to attend those events, please ask at the Registration Desk.

4-1. Special Talk by Prof. Yuan Tseh Lee (Tuesday, Sep. 25 12:45-13:45 at 3F Main Hall)
A special talk for early career scientists entitled “Dare to be Different” by Nobel Laureate Prof. Lee. Prof. Lee received a Nobel Prize for Chemistry in 1986 for his contributions to the dynamics of chemical elementary processes. He is currently serving as the President Emeritus and Distinguished Research Fellow at Academia Sinica, Taiwan. His talk will definitely be a source of inspiration for the younger generation of scientists. Don’t miss this wonderful opportunity.

4-2. Early Career Mixer (Tuesday, Sep. 25 19:30-21:00 at Tent Area)
An Early Career Mixer is planned as a get-together for all early career scientists. This mixer will serve as an excellent opportunity for meeting and networking with other early career scientists attending iCACGP-IGAC 2018.

4-3. Soft Skill Talk (Wednesday, Sep. 26 12:45-13:45 at 3F Main Hall)
Soft skills including such topics as time management, leadership skills, and social media are integral parts of science. You will experience some exciting talks on developing soft skills by some recognized leaders. These talks are intended to help early career scientists develop essential skills for their work and daily life.

4-4. Early Career Excursion (Thursday, Sep. 27 13:30-18:00)
Take advantage of the free afternoon with an excursion along with other early career scientists. An excursion to the Konpira Shrine and Tamamo Park has been arranged for early career scientists.

4-5. Lunch with Established Scientists (Friday, Sep. 28 12:45-13:45 at Tent Area)
The early career program at iCACGP–IGAC 2018 provides a lunch to provide an opportunity for early career scientists to connect with established scientists. This lunch will facilitate closer interactions between early career and established scientists.

4-6. Early Career Presentation Awards
Throughout the week, early career scientists’ poster and oral presentations will be judged. Awards for early career scientists’ poster and oral presentations will be given out at the Closing Ceremony on Saturday, Sep. 29.

5. Health & Safety

Medical Care
Around the conference venue there are general hospitals as well as clinics. In case of health problems, participants can see a medical doctor without an appointment. There are many pharmacies where visitors can consult with a pharmacist and buy medicine. Should participants have emergency health issues at night or on the weekends, they can visit emergency hospitals that are open 24 hours 7 days.

Emergency Phone Numbers
• Ambulance & Fire: 119
• Police: 110

Useful Website
• Safety tips for travelers: www.jnto.go.jp/safety-tips/eng/index.html
• “Safety tips” (a push–enabled information alert app for foreign tourists): www.rcsc.co.jp/safety-tips-en
• “Safety tips” notifies a user with Earthquake Early Warnings, Tsunami Warnings, Eruption Alert and other special Weather Warnings issued in Japan.
• Emergencies: www.japan.travel/en/plan/emergencies/

Travel Insurance
LOC strongly recommends buying travel insurance. Please be sure to get a policy that is valid in Japan which also covers full medical coverage and evacuation coverage should you become sick or have an accident while in Japan as they cannot be covered by the iCACGP–IGAC 2018 LOC.
Information for Presenters

Oral Presentation

1. Time Allotted for Presentations

- Keynote presentation is 25 minutes in length, with 5 minutes for Q & A.
- Invited oral presentation is 12 minutes in length, with 3 minutes for Q & A.
- Oral presentation is 12 minutes in length, with 3 minutes for Q & A.
- All oral presenters are required to be seated around the Next Speaker’s Seat during their session.
  * Your punctuality would be highly appreciated.

2. PC Preview Desk

- All oral presenters should check in at PC Preview Desk at least 3 hours before their presentation time. They need to bring their presentation file with USB or laptop.
- Oral presenters can use their own laptop for the presentation. After the preview at PC Preview Desk, please bring your laptop to the Computer Operation Desk at least 30 minutes before your presentation. The Computer Operation Desk is located at the front left side of the Plenary Room.
- Macintosh users are encouraged to bring your own laptop.
- PowerPoint and Adobe PDF are the only applications accepted.
- Video projector’s aspect ratio is 4:3.

[Precautions When Bringing Media]

- MS Windows PowerPoint: 2010/2013/2016 are acceptable.
- Please use standard fonts such as Arial, Century, Times New Roman, etc.
- If you are using video data, please bring your own laptop.
- Video data for PowerPoint presentations should be able to run in codec with default state of Windows 10(OS) and Windows Media Player 12. To have it linked with PowerPoint, please save your data in the same folder.
  - Please check your data with Virus Scanner.
  - Please be sure to bring your back-up data with you.

[Precautions When Bringing Your Own Laptop]

- Please cancel the password, screensaver, and power-saving settings in advance.
- The connection for the output connector is “Mini D-sub 15 pin.”
- If you have a different output connector, please bring an appropriate conversion connector. Also, please remember to bring your computer’s AC adapter.
- Please make sure to prepare a back-up data on USB drive with you.

Poster Presentation

1. Place

- Session 1, 3 & 5: 1F, Exhibition Hall and Citizens Gallery
- Session 2 & 4: 5F, Small Hall 2

2. Schedule

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<tr>
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<th>Sep. 25</th>
<th>Sep. 26</th>
<th>Sep. 27</th>
<th>Sep. 28</th>
<th>Sep. 29</th>
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<tbody>
<tr>
<td>Poster set-up</td>
<td>9:00-13:00</td>
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<td>Poster viewing</td>
<td>13:00-17:30</td>
<td>9:00-16:00</td>
<td>9:00-13:00</td>
<td>9:00-16:00</td>
<td>9:00-11:15</td>
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<tr>
<td>Presentation</td>
<td>–</td>
<td>16:00-18:00 (Session 1&amp;2)</td>
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<td>16:00-18:00 (Session 3,4&amp;5)</td>
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<tr>
<td>Poster removal</td>
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<td>11:15-12:30</td>
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</tbody>
</table>

- Poster presenters should be at their posters from 16:00–18:00 on the day of their poster presentation.
- It is your responsibility to remove your posters. **The Secretariat will recycle any posters that are left behind after the poster removal time.**
Program
Tuesday, September 25

9:00-10:00 | Opening Ceremony

10:00-10:30 | Special Guest Speaker

10:00 | Achievement and Challenges of Atmospheric Chemists

Yuan Tseh Lee

President Emeritus and Distinguished Research Fellow, Academia Sinica, Taiwan
Former President of the International Council of Science (ICSU)
Nobel Laureate in Chemistry, 1986

Prof. Yuan T. Lee received his B.S. degree from National Taiwan University and Doctorate from UC Berkeley. He is the first Taiwanese to win a Nobel Prize, which he was awarded jointly with Hungarian-Canadian John C. Polanyi and American Dudley R. Herschbach in Chemistry in 1986 “for their contributions concerning the dynamics of chemical elementary processes”. Prof. Lee’s work was related to the use of advanced chemical kinetics techniques to investigate and manipulate the behavior of chemical reactions using crossed molecular beams. He has also been honored with several other international awards in addition to the Nobel Prize for his invaluable contributions to the field of chemistry.

Prof. Lee holds Honorary Doctorates from 41 universities worldwide, and is an elected member of various academies throughout the world. He is President Emeritus and Distinguished Research Fellow of Academia Sinica in Taiwan and is the former President of the International Council for Science (ICSU) in 2011–2014.

Aside from his scientific interests, he also directed much of his attention to the advancement of international scientific developments and to the promotion of general public affairs. He has served as advisory board member on numerous national and international organizations. He is passionate about global sustainability, and in 2015, he signed the 2015 Mainau Declaration expressing concern about anthropogenic climate change.

10:30-11:15 | Coffee Break / Posters

11:15-17:30 | Session 1 Atmospheric Chemistry & People

Conveners: Paul Beukes (South Africa)
Manish Naja (India)

11:15 | Emissions, air pollution, health and society in Africa
Cathy Lioussse (Invited)
Laboratoire d’Aérologie, Université Paul Sabatier Toulouse III-CNRS, France

11:30 | Surface ozone variability in continental South Africa
Pieter Gideon van Zyl
North-West University, South Africa

11:45 | What level of air quality monitoring data is needed to support effective policy action to reduce pollution?
Aderiana Mbandi
South Eastern Kenya University, Kenya (Early Career Scientist)

12:00 | Trends of PM pollution and health effects in Europe during the 1990s and 2000s: Multi-model and observational assessment
Svetlana Tsyro
Norwegian Meteorological Institute, Norway

12:15 | Establishing connections between aerosol chemical composition and possible health effects
Yinon Rudich
Weizmann Institute, Israel

12:30-14:00 | Lunch at Tent Area
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00</td>
<td>Atmospheric chemistry: A quiet revolution helping people mitigate risks of air pollution</td>
<td>Rajesh Kumar (Invited)</td>
<td>National Center for Atmospheric Research, USA</td>
</tr>
<tr>
<td>14:15</td>
<td>Decadal changes of ozone–NOx–VOC sensitivity over Japan estimated using satellite data and their impact on the effectiveness of surface ozone mitigation policies inferred from air quality simulations</td>
<td>Kazuya Inoue</td>
<td>National Institute of Advanced Industrial Science and Technology, Japan</td>
</tr>
<tr>
<td>14:30</td>
<td>Effect of Megacities on the transport and transformation of pollutants on the Regional to Global scales (EMeRGe): An overview of the HALO airborne campaigns in Europe and Asia</td>
<td>Maria Dolores Andrés Hernández</td>
<td>University of Bremen, Germany</td>
</tr>
<tr>
<td>14:45</td>
<td>Source apportionment of particulate matter using a low–cost multi–pollutant air quality sensor in an Indian megacity</td>
<td>David Hagan</td>
<td>Massachusetts Institute of Technology, USA (Early Career Scientist)</td>
</tr>
<tr>
<td>15:00</td>
<td>Forecast the shipping emissions and impacts in China</td>
<td>Huan Liu</td>
<td>Tsinghua University, China</td>
</tr>
<tr>
<td>15:15</td>
<td>Recent changes of trans–boundary air pollution over northeast Asia: Implications for future air quality in South Korea</td>
<td>Piyush Bhardwaj</td>
<td>Gwangju Institute of Science and Technology, Korea (Early Career Scientist)</td>
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<tr>
<td>15:30-16:15</td>
<td>Coffee Break / Posters</td>
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<tr>
<td>16:15</td>
<td>The tropospheric ozone assessment report (TOAR): A community–wide effort to quantify tropospheric ozone in a rapidly changing world</td>
<td>Owen Cooper</td>
<td>University of Colorado / NOAA Earth System Research Laboratory, USA</td>
</tr>
<tr>
<td>16:30</td>
<td>A new top–down approach to quantifying the spatial, temporal, and vertical distribution of urban and biomass burning regions using decadal measurements from MOPITT and AERONET</td>
<td>Chuyong Lin</td>
<td>Sun Yat-Sen University, China (Early Career Scientist)</td>
</tr>
<tr>
<td>16:45</td>
<td>Air quality in Puerto Rico in the aftermath of Hurricane Maria</td>
<td>Olga L Mayol-Bracero</td>
<td>University of Puerto Rico, Puerto Rico</td>
</tr>
<tr>
<td>17:00</td>
<td>Detecting human emissions of volatile chemical products in urban atmospheres</td>
<td>Brian McDonald</td>
<td>University of Colorado / NOAA Earth System Research Laboratory, USA</td>
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<tr>
<td>17:15</td>
<td>Towards improved quantification of Russian oil and gas extraction emissions based on analysis of YAK–AEROSIB aircraft data</td>
<td>Kathy Law</td>
<td>Laboratoire Atmosphères, Milieux, Observations Spatiales (LATMOS)-CNRS, France</td>
</tr>
</tbody>
</table>

17:30-19:00 | Welcome Social Hour at Poster Room |
The water content of atmospheric aerosols controls many properties including their ability to
catalyze heterogeneous chemical reactions, their impact on climate and visibility, and their ability to
form clouds. In the atmosphere, the water content of the particles depends on their composition as
well as the relative humidity and temperature. As crystalline salt particles are exposed to increasing
relative humidity, the deliquescence phase transition results in rapid formation of aqueous droplets
at the deliquescence relative humidity (DRH). The DRH values of atmospheric salts are generally well
predicted by theory. In contrast, decreasing relative humidity results in particle morphologies and
water content that are difficult to predict theoretically, and must be measured in the laboratory. At
sufficiently low relative humidity, the droplets may undergo efflorescence (at the ERH), resulting in
recrystallization of the salt particles. Hysteresis in water uptake and loss is often observed and the
DRH can be very much higher than the ERH. Thus atmospheric salt particles are often assumed to
be aqueous throughout much of their atmospheric lifetime. Here we use a long working distance
optical trap to measure the deliquescence and efflorescence phase transitions of individual levitated
salt particles. In addition, we probe how efflorescence is influenced by collisions of the salt droplet
with other particles and by immersion of solids within the droplet. We find that while both contact
and immersion can promote efflorescence, contact–induced efflorescence is by far more effective.
These laboratory experiments challenge our theoretical understanding of nucleation in microscopic
salt particles. In addition, the experiments have implications for particle phase and water content of
aerosols in the global atmosphere.
11:45 The significant role of cloud chemistry in tropospheric NOx and oxidant cycles
Christopher Holmes
Florida State University, USA

12:00 Role of sulfate radical anion chemistry in heterogeneous OH oxidation of organosulfates
Man Nin Chan
The Chinese University of Hong Kong, Hong Kong

12:15 Influence of relative humidity on the heterogeneous oxidation of secondary organic aerosol
Christopher Cappa
University of California, Davis, USA

12:30-14:00 Lunch at Tent Area

14:00 Linking theoretical kinetic studies with laboratory and chamber experiments
Luc Vereecken (Invited)
Institute for Energy and Climate Research, IEK-8: Troposphere, Forschungszentrum Jülich GmbH, Germany

14:15 An updated isoprene oxidation and deposition scheme in the IMAGES model
Jean-François Müller
Royal Belgian Institute for Space Aeronomy, Belgium

14:30 Kinetics of Criegee intermediates
Jim Lin
Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan

14:45 ROOOH: The missing piece of the puzzle for OH measurements in low NO environments
Christa Fittschen
University Lille / CNRS, France

15:00 OH, HO₂ and RO₂ radical and OH reactivity observations during wintertime and summertime in Beijing, and comparison with both steady state calculations and box model simulations
Eloise Slater
University of Leeds, UK (Early Career Scientist)

15:15 Reconciling organic auto-oxidation, new-particle formation, and chamber secondary organic aerosol formation
Neil Donahue
Carnegie Mellon University, USA

15:30-16:00 Coffee Break / Posters

16:00-19:00 Poster Session
Session 1: Atmospheric Chemistry & People
Session 2: Atmospheric Chemistry & Fundamentals

18:00-19:00 Social Hour at Poster Room
The science of atmospheric composition and chemistry is based on three essentials: fundamental knowledge, observations and modelling. The study of this has passed from mainstream physical research in the 18th century to an adjunct of meteorology in the 19th and early 20th century, and then to a recognised field of chemistry in the late 20th century. Today, in the 21st century, it is a core component of Earth systems science, the multidisciplinary study of the Earth in all its facets.

In the 18th century, eminent scientists investigated the composition of air identifying nitrogen, oxygen, carbon dioxide, hydrogen and other atmospheric gases. In the late 19th century William Ramsay identified Argon from the distillation of air.

The broader development of the science of atmospheric composition and chemistry included: the need for understanding of the nutrition of plants and the production of food by de Saussure, Liebig and others in the 19th century, the coupling of urban air pollution and health concerns by RA Smith in the 19th century and Haagen-Smit in the 20th century, the desire to probe the then inaccessible upper atmosphere by remote sensing and modelling by Dobson and Chapman in the early 20th century, and concerns about continental scale and global pollution including global warming and ozone layer depletion by Callendar, Keeling, Oden, Johnston, Crutzen, Rowland and Molina in the 20th century. This history will be reviewed and then a perspective on several questions relevant to the 20th and 21st Century will be presented:

- How has the study of atmospheric composition and chemistry changed in the last 60 years?
- What are the key features of atmospheric composition and chemistry science today?
- How has the global distribution and gender balance of scientists in this area changed?
- How will the future of atmospheric composition and chemistry science be realised?

9:30-12:45 | Session 3  Atmospheric Chemistry & Ecosystems
Conveners: Sachiko Hayashida (Japan)
Nicolas Huneeus (Chile)

9:30  Biogenic modelling activities in eucalypt-rich southeast Australia
3.038  Kathryn Emmerson (Invited)
CSIRO, Australia

9:45  Stress–induced biogenic organic emissions and atmospheric chemistry interactions
3.102  Alex Guenther
University of California, Irvine, USA

10:00  Direct OH reactivity measurements show agricultural crop residue fires fuel large missing OH reactivity associated with rapid photochemical formation of reactive nitrogen organics
3.127  Vinayak Sinha
Indian Institute of Science Education and Research, India

10:15  Characterization of carbonaceous aerosols emitted from peatland burning in central Kalimantan Indonesia
3.092  Puji Lestari
Institute of Technology Bandung, Indonesia

10:30-11:15 | Coffee Break / Posters

11:15  Summertime observations of ultrafine particles and their growth to CCN sizes in the high arctic marine boundary layer
3.059  Jonathan Abbatt
University of Toronto, Canada

11:30  Organic matter in marine aerosol particles: Chemical characterization, transfer and sources
3.066  Nadja Triesch
Leibniz Institute for Tropospheric Research (TROPOS), Germany (Early Career Scientist)
<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>11:45</td>
<td>Development of an aerosol reanalysis product – JRAero</td>
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<td>Keiya Yumimoto</td>
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<td>Kyushu University, Japan</td>
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<td>12:00</td>
<td>Ammonia revealed from space: From industrial and agricultural point sources to global trends</td>
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<td>Martin Van Damme</td>
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<td>Université libre de Bruxelles (ULB), Belgium (Early Career Scientist)</td>
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<td>12:15</td>
<td>The mysterious global methane budget</td>
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<td>Lori Bruhwiler</td>
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<td>NOAA Earth System Research Laboratory, USA</td>
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<td>12:30</td>
<td>Contributions of commercial aircraft for researching atmospheric greenhouse gases</td>
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<td>Toshinobu Machida (Invited)</td>
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<td>National Institute for Environmental Studies, Japan</td>
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<td>12:45</td>
<td>Group Photo / Free Afternoon / Optional Expedition</td>
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<td>18:30-23:00</td>
<td>Conference Banquet &amp; Dance Party</td>
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<td>3F Hiten Banquet Room, JR Hotel Clement Takamatsu</td>
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**History of IGAC**

The International Global Atmospheric Chemistry (IGAC) Project was formed in 1990, and it has been, since then, continuously developing. Currently, the IGAC’s mission is to facilitate atmospheric chemistry research towards a sustainable world. This is achieved through IGAC’s three focal activities: fostering community, building capacity, and providing leadership.

**History of IGAC Science Conference**

- 2018 Takamatsu, Kagawa, Japan (joint with iCACGP)
- 2016 Breckenridge, CO, USA
- 2014 Natal, Brazil (joint with iCACGP)
- 2012 Beijing, China
- 2010 Halifax, Canada (joint with iCACGP)
- 2008 Annecy, France
- 2006 Cape Town, South Africa (joint with iCACGP/WMO)
- 2004 Christchurch, New Zealand
- 2002 Crete, Greece (joint with iCACGP)
- 1999 Bologna, Italy
- 1998 Seattle, WA, USA (joint with iCACGP)
- 1997 Melbourne, Australia (joint with iCACGP, IAPSO)
- 1995 Beijing, China
- 1994 Fuji–Yoshida, Japan (Joint with iCACGP)
- 1993 Eilat, Israel
Friday, September 28

9:00-15:30  |  Session 4  Atmospheric Chemistry & Climate/Weather
Conveners: Mary Barth (USA)
            Michael Gauss (Norway)

9:00  Spatial and temporal variation of haze in the Yangtze River Delta region from 1961 to 2015
4.084  Rui Han
China Meteorological Administration, China

9:15  The impact of climate variability on volatile organic compounds emissions assessed using spaceborne formaldehyde data from SCIAMACHY and OMI
4.021  Jenny Stavrakou
Royal Belgian Institute for Space Aeronomy (BIRA-IASB), Belgium

9:30  Persistent La Niña–like climate in 2010s reduced export from China and suppressed ozone trend in the lower troposphere over Japan
4.059  Sachiko Okamoto
National Institute for Environmental Studies, Japan

9:45  Global scale variability of the mineral dust shortwave and longwave refractive index: A new dataset of in situ measurements for climate modelling and remote sensing
4.163  Claudia Di Biagio
LISA, CNRS, UPEC and UPD, IPSL, France

10:00  Dust induced changes on the West African summer monsoon features
4.054  N’Datchoh Evelyne Toure
University Felix Houphouet Boigny, Cote d’Ivoire (Early Career Scientist)

10:15  Deep convective transport, lightning NOx production, and wet-scavenging in mid-latitude deep convection: Combining modeling and observations from DC3
4.203  Kenneth Pickering
University of Maryland, USA

10:30-11:15  |  Coffee Break / Posters

11:15  Characterizing the climatological composition and intraseasonal and interannual variability of the Asian summer monsoon anticyclone using Aura Microwave Limb Sounder measurements
4.028  Michelle Santee
Jet Propulsion Laboratory, California Institute of Technology, USA

11:30  The influence of dimethyl sulfide produced by global coral reefs on the climate
4.007  Sonya Fiddes
University of Melbourne, Australia (Early Career Scientist)

11:45  Changing conditions in the Arctic: An analysis of trends in observed surface ozone conditions
4.052  Audra McClure-Begley
University of Colorado / NOAA Earth System Research Laboratory, USA (Early Career Scientist)

12:00  Enhanced surface ozone during the heat wave of 2013 in Yangtze River Delta region, China
4.018  Tijian Wang
Nanjing University, China

12:15  Unraveling the influences of pollution and climate trends on radiation fog frequency using generalized additive models
4.023  Ellyn Gray
University of California, Berkeley, USA (Early Career Scientist)
12:30-14:00 | Lunch at Tent Area

14:00   How do short-lived climate forcers affect climate?  
        William Collins (Invited)  
        University of Reading, UK

14:15   Impacts of drought on air quality  
        Yuxuan Wang  
        University of Houston, USA

14:30   Impact of particle size and mixing state diversity on estimates of black carbon mitigation  
        Hitoshi Matsui  
        Nagoya University, Japan

14:45   Equilibrium climate and air pollution responses to greenhouse gases, anthropogenic emissions and ozone changes from 1970 to 2010 under different EDGAR emission scenarios  
        Alcide Zhao  
        University of Edinburgh, UK (Early Career Scientist)

15:00   Impacts of climatic and land-use changes on global aerosol burden  
        Alan Lim  
        The Chinese University of Hong Kong, Hong Kong (Early Career Scientist)

15:15   Impact of reduction of ship-induced sulphur emission on climate and health  
        Mikhail Sofiev  
        Finnish Meteorological Institute, Finland

15:30-16:00 | Coffee Break / Posters

16:00-18:00 | Poster Session  
        Session 3: Atmospheric Chemistry & Ecosystems  
        Session 4: Atmospheric Chemistry & Climate / Weather  
        Session 5: Challenging the Future

18:00-19:00 | Social Hour at Poster Room
Saturday, September 29

9:00-9:30   | Keynote Lecture 3

9:00   Atmospheric Chemistry research from fundamentals to policy relevance – Recent research experience

K.003   Hajime Akimoto
National Institute for Environmental Studies, Japan

The three-leg view on atmospheric chemistry research is widely accepted in the IGAC community (Melamed et al., Anthropocene 2015). I will propose an alternative slightly modified four-element view including “policy relevance” explicitly. In my talk, I will cover the following three topics based on our recent research experience referring to the policy relevance in the above scheme.

- Ozone prediction and control strategy based on chemical transport models: Tropospheric ozone chemistry mainly based on the homogeneous gas-phase chemical kinetics is thought to be matured in general. However, our recent studies in MICS-Asia III revealed that there exists substantial disagreement among the CTMs and between model simulation and observation, which may affect policy proposal.

- Chemistry and physics of secondary organic aerosols: In contrast to O₃, which has been investigated for more than 40 years, atmospheric chemistry on tropospheric fine particles typified by PM₂.₅ is still pre-matured, and the studies are going on most actively now. In order to obtain reliable source apportionment of PM₂.₅, which is more policy relevant, studies to quantify atmospheric processes have to be established incorporating fundamental research.

- Air quality–climate interaction and SLCP co-control strategy: In order to mitigate extreme events induced by global warming in the next 30 years, co-control of SLCPs is the only way to achieve this goal. Climate sensitivities of O₃, CH₄, BC and white aerosols per unit RF_TOA have to be evaluated more precisely in order to propose more solid co-control measures. Quantification of CCN activities of aerosols based on chemical structures has to be studied fundamentally also.

9:30-12:30   | Session 5   Challenging the Future

Conveners: Greg Frost (USA)
Xuemei Wang (China)

9:30   Moving the full complexity of the ocean–atmosphere system into the laboratory for fundamental chemistry studies

5.011   Kimberly Prather (Invited)
University of California, San Diego, Scripps Institution of Oceanography, USA

9:45   Global, in situ measurements of new particle formation and growth to CCN sizes

5.025   Charles Brock
NOAA Earth System Research Laboratory, USA

10:00   Spatial and temporal optimisation of variable density/capability air quality networks.
Improving returns from emerging low-cost air quality monitoring networks

5.022   Mohammed Iqbal Mead
Cranfield University, UK

10:15   Replacing the integrator: Modelling atmospheric chemistry with machine learning

5.005   Mathew Evans
University of York, UK

10:30-11:15   | Coffee Break / Posters

11:15   Observing air quality from geostationary constellation

5.029   Jhoon Kim (Invited)
Yonsei University, Korea

11:30   New perspectives on atmospheric chemistry from the Sentinel–5p TROPOMI sensor and the 23–year QA4ECV climate data record

5.033   Klaas Folkert Boersma
KNMI / Wageningen University, The Netherlands
In Celebration of the 60th Anniversary of iCACGP

The international Commission on Atmospheric Chemistry and Global Change (iCACGP) was founded in 1957 as the Commission on Atmospheric Chemistry and Radioactivity. In 1971 the name was changed to the Commission on Atmospheric Chemistry and Global Pollution (CACGP), then to iCACGP in 2006. iCACGP is one of the Commissions in IAMAS (International Association of Meteorology and Atmospheric Sciences), which is one of the associations within the IUGG (International Union of Geodesy and Geophysics) and part of the International Science Council. iCACGP has played a key role in the creation of both IGAC and SOLAS and continues to provide oversight and support by sponsoring scientifically these successful projects. Throughout its evolving history, iCACGP has striven to bring the international scientific community undertaking research into global pollution and atmospheric chemistry together to facilitate, optimise and evolve its research. The overarching driver motivating iCACGP is the facilitation of the research needed to improve our understanding and knowledge of the physical, chemical and or biological processes, which determine the conditions within the earth system, in particular atmospheric composition. Scientific curiosity is harnessed by this community to address issues of societal importance and separate the impact of anthropogenic activity from that of natural phenomena in the Earth System. This multidisciplinary science relies on disciplinary excellence to achieve its goals. Our research community provides knowledge and an evidence base of critical importance for the evolution of our science and that needed by international policymakers, attempting to achieve sustainable development.

In addition to the presentation of the latest scientific results within the iCACGP research fields, this 14th iCACGP Quadrennial Symposium, which takes place jointly with the 15th IGAC Science Conference, celebrates the successes of our scientific community over the past six decades of the Anthropocene. We also take the opportunity to recognise the scientific contributions and service made by our iCACGP honorary members: Hajime Akimoto, National Institute for Environmental Studies, Japan, Bert R. J. Bolin, MISU, Sweden (15th of May 1925 – 30th of December 2007), Paul J. Crutzen, Max Planck Institute for Chemistry, Germany, Robert A. Duce, Texas A&M University, USA, Ian Galbally, CSIRO, Australia, Phillip Goldsmith, Met Office UK and ESA, Maria Kanakidou, University of Crete, Greece, Mario J. Molina, University of California San Diego, USA and the Mario Molina Center for Strategic Studies on Energy and the Environment Mexico, Henning Rodhe, MISU, Sweden, F. Sherwood Rowland, UC Irvine, USA (28th of June, 1927 – 10th of March, 2012), Anne M. Thompson, NASA/GSFC, USA.
Conference Sponsors

Local Public Sponsors

Kagawa Prefectural Government, Takamatsu City, and Takamatsu Convention and Visitors Bureau provide strong support to iCACGP–IGAC 2018 and its Outreach Program as well as IGAC SSC Meeting. Thank you!

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RESTEC, as the core organization of satellite remote sensing in Japan, aspires to build remote sensing technologies through comprehensive research and development and capacity building. Using these technologies, RESTEC obtains data from different platforms, and processes and analyzes them. RESTEC also calibrates and validates those data, develops software, and provides policy makers, researchers and other users with remote sensing solutions. By distributing the obtained information to users, RESTEC contributes to the resolution of environmental and climate change issues.

Center for Global Environmental Research (CGER), National Institute for Environmental Studies (NIES)

The Center for Global Environmental Research (CGER) is the center for climate change research at the National Institute for Environmental Studies (NIES) and the focal point of environmental research in Japan. CGER aims to scientifically clarify the impact humankind has on the global environment, and to build the foundation for environmental protection measures. CGER monitoring activities encompass the atmosphere and ocean, forest ecosystems and carbon balance, using ground–based methods, ships, aircraft and satellite. Furthermore, CGER promotes research on low–carbon societies and supports global environmental research by developing environmental monitoring databases.

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Kimoto Electric Co., Ltd is a pioneer in manufacturing ambient air monitoring instruments. Founded in 1953, we were the first developers of continuous SO2 and Smoke analyzers. This spirit of innovation has continued for over 65 years. We specialize in designing continuous automated monitoring instruments for ambient air quality, water and ocean environments, and overall global health. Our commitment to the environment, quality of our products, and the needs of our end users is second to none.

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Toyofuji Shipping Co., Ltd. is the Toyota Group’s sole marine transport company. We mainly deliver vehicles to major ports both in Japan and overseas. Since 2002, we are cooperating with the National Institute for Environmental Studies (NIES) in conducting atmospheric and oceanographic monitoring studies. Currently, we are helping NIES with monitoring greenhouse gases along its North America, Oceania and Southeast Asia routes. The air and seawater samples are analyzed at NIES, contributing to the clarification of the global carbon cycle.

Shoreline Science Research, Inc.

Our name, "Shoreline" Science Research, Inc. represents the border of land, sea and air, suggesting heterogeneous atmospheric chemistry, and also implies our orientation to niche markets. Adopting the motto “1 s detection, 1 s response time, and ppt level sensitivity”, we specialize in real–time measurements, and provide unique state–of–the art analytical instruments and related solutions from physicochemical, kinetic and chemical engineering points of view.
Silver Sponsors

**Picarro, Inc.**
Picarro is a leading provider of solutions to measure greenhouse gas (GHG) concentrations, trace gases and stable isotopes across many scientific applications. Our portfolio of gas analyzers and systems enables scientists around the world to measure GHGs, trace gases and stable isotopes found in the air we breathe, water we drink and land we harvest. Our patented Cavity Ring-Down Spectroscopy (CRDS) is at the heart of all Picarro instruments, enabling the detection of target molecules at parts per billion or better resolution.

**Diamond Air Service, Inc.**
Diamond Air Service Inc. (DAS) conducts microgravity flight experiments as a member of the Mitsubishi Heavy Industries Ltd. group. We also conduct repair works for aircraft owned by the Ministry of Defense, as well as assembly of new aircraft. Furthermore, we respond to various customer requests for aircraft flight operations such as earth and atmospheric observation, search missions, aerial photography, radio communication, broadcasting experiments, and disaster damage surveillance. We are deeply committed to quality and timeliness, and contribute to society by generating a synergy between safety management in flight operation and strict quality assurance.

**Elementa: Science of the Anthropocene**
Open Science for Public Good. Elementa: Science of the Anthropocene (www.elementascience.org) is a trans-disciplinary, open-access journal committed to the facilitation of collaborative, peer-reviewed research. With the ultimate objective of accelerating scientific solutions to the challenges presented by this era of human impact, it is uniquely structured into six distinct knowledge domains—Atmospheric Science, Earth & Environmental Science, Ecology, Ocean Science, Sustainable Engineering, and Sustainability Transitions—and gives authors the opportunity to publish in one or multiple domains, helping them to present their research and commentary to interested readers from disciplines related to their own.

**Shimadzu Corporation**
Shimadzu Corporation has remained committed to commercializing cutting-edge technology and providing it to customers in a wide array of industries for more than 140 years. Our brand statement, "Excellence in Science", reflects our desire and attitude to diligently respond to customers’ requirements by offering superior, world-class analytical and measuring instruments, medical systems, aircraft equipment and industrial machinery for the advancement of human health, the safety and security of society, and industrial processes. In today’s challenging, ever-changing landscape, Shimadzu aims to partner with customers to meet their needs with unique technologies and solutions.

**Japan Meteorological Corporation**
Japan Meteorological Corporation (JMC) is a meteorological service provider headquartered in Osaka, Japan. JMC carries out a range of services, including weather prediction, meteorological measurements, energy-related forecasts, IoT technology services, and data–science analyses. JMC conducts business activities nationwide throughout Japan, applying their extensive meteorological knowledge and capabilities. Recent developments include atmospheric wind measurement by Doppler LIDAR for wind-turbine electricity generation, environmental assessment, and urban meteorology.

**Earth Observation Research Center (EORC), Japan Aerospace Exploration Agency (JAXA)**
The Japan Aerospace Exploration Agency (JAXA) was born through the merger of three institutions, namely the Institute of Space and Astronautical Science (ISAS), the National Aerospace Laboratory of Japan (NAL) and the National Space Development Agency of Japan (NASDA). The Earth Observation Research Center (EORC) was established under JAXA in April 1995 as Japan’s core organization for Earth observation satellite data processing, analyzing, calibration/validation, and archiving. By continuing to carry out these activities using space-based Earth observation technology, we hope to assist humankind in its adaptation to climate change.

**World Meteorological Organization**
The Global Atmosphere Watch Programme (GAW) is the research programme of the World Meteorological Organization (WMO) that provides a long-term international framework for integrated observations, analysis and assessment of atmospheric chemical composition. The programme is a collaboration of more than 100 countries and it relies fundamentally on the contributions of its Members to help build a single, coordinated global understanding of atmospheric composition and its change. The vision for the next decade of GAW is to grow the international network of high-quality atmospheric observations across local to global scales to drive high quality and impact science while co-producing a new generation of research-enabled products and services. GAW focal areas are GHGs, ozone, UV, aerosols, selected reactive gases, and total atmospheric deposition.
Nippon Thermo Co., Ltd.
We started 38 years ago as a joint company with the American Thermo Electron Co., concentrating on gas analyzers. We not only deal with import, marketing and maintenance of analyzers, but we also adjust and improve them for use in Japan, manufacture other equipment in relation to analyzers and sell them as a comprehensive analytical system. Furthermore, we act as an agent for import and maintenance of overseas analyzing equipment. We will continue our efforts to provide a full supply and support service of goods to our customers.

Panasonic Corporation Eco Solutions Company
Since the founding of our company in 1918, we at Panasonic have been providing better living for our customers, always making "people" central to our activities, and thus focusing on "people's lives." Going forward as well, based on our innovative electronics technology, we will provide a wide variety of products, systems, and services, ranging from consumer electronics products to industrial devices, building products, and housing. In various spaces and areas, such as homes, communities, businesses, journeys and automobiles, we will continue to work hard to offer new value for better living, and help realize "A Better Life, A Better World" for each individual customer.

Asia Center for Air Pollution Research (ACAP), Japan Environmental Sanitation Center
Asia Center for Air Pollution Research (ACAP) handles scientific and technical matters of the Acid Deposition Monitoring Network in East Asia (EANET), a regional initiative for promoting cooperation in addressing acid deposition issues in East Asia, and is one of the hubs of the research on air pollution in East Asia including acid deposition and oxidant.

Acid Deposition Monitoring Network in East Asia (EANET)
EANET started in 1998 as an intergovernmental initiative to create a common understanding on the state of acid deposition problems in East Asia, provide useful inputs for decision making at various levels with the aim of preventing or reducing the adverse impacts on the environment, and promote cooperation among countries. Thirteen countries in East Asia are participating in EANET at present. UN Environment Asia Pacific is the Secretariat and the Asia Center for Air Pollution Research (ACAP) located in Japan is the Network Center for EANET.

Droplet Measurement Technologies, Inc.
Droplet Measurement Technologies creates, manufactures, and services leading cloud and aerosol instruments that propel breakthroughs in environmental science and engineering. With a legacy of fostering invention and a renewed commitment to science and innovation, we help champion discovery in support of people and planet.

Markes International Ltd
Markes International is a specialist manufacturer of instrumentation for detection of trace–level volatile and semi–volatile organic compounds (VOCs and SVOCs). Markes has a well–deserved reputation for its application expertise in the field of thermal desorption, supplying a comprehensive range of instruments, sampling equipment and consumables that enhance the analytical capability of GC–MS. Markes has also gained recognition for its innovative, high–performance time–of–flight mass spectrometers for GC. New for 2018 is Centri®, an automated multi–mode sampling platform for pre–concentration of analytes from liquid, solid and gaseous samples.

Fujitsu Limited
We provide innovative IT services and digital technologies to businesses, deliver positive business solutions and build a unique partnership with our customers. Through co–creation and innovation, we continue to work towards realizing a safe and sustainable society, thus providing a bright future to all people in the whole world.

Bronze Sponsors
Medical Supplements and Services (MSS)
We live in a world of steadily progressing medical development. There are today more than 2000 medical institutions in Japan that incorporate ozone therapy in their regular treatment methods. Our mission is to offer new possibilities in medical treatment by providing systematic and practical theoretical knowledge and up–to–date information in biochemistry and molecular nutrition sciences, high–quality and high–precision products, and a large variety of continuous services to doctors and medical staff engaged in ozone molecular treatment methods.
Takamatsu Preparatory School

Takamatsu Preparatory School, or Takayobi, is committed to helping students achieve their dreams and enter the college of their first choice. Every year, over 1,000 students come to Takayobi from 39 prefectures across the nation. Takayobi is the only school that offers: a dormitory network to support both the academic and personal growth of the students; lectures by professional instructors; placement according to the level of each student; learning materials fine-tuned to each grade; guidance; and study rooms open to all students. With this ideal learning and living environment, Takayobi successfully continues to send young talents to prestigious universities and medical schools in Japan.

Atmosphere, MDPI

MDPI is a pioneer in scholarly open access publishing who has supported academic communities since 1996. Sponsor Journals include Atmosphere (launched in 2010; Impact Factor 1.487), IJERPH (launched in 2004; Impact Factor 2.101), Climate (launched in 2013; indexed by ESCI, Scopus), Environments (launched in 2014; indexed by ESCI), Geosciences (launched in 2011; indexed by ESCI, Scopus). Atmosphere (ISSN 2073–4433) is an international and cross-disciplinary scholarly journal of scientific studies related to the atmosphere, with a strong emphasis on aerosols, air quality, biometeorology, biosphere/hydrosphere/land–atmosphere interactions, climatology and meteorology.

Japan Environmental Sanitation Center

As a nonprofit organization geared towards the improvement of the living environment, JESC actively pursues environmental protection and conservation through the whole range of its activities, and thereby contributes to create a healthier global environment for the future.

It’s specific activities are as follow: (1) Activities to Promote Proper Management of Waste, (2) Activities to Help Advance Environmental Protection and Conservation, (3) Activities to Control Vectors and Nuisances, and (4) Activities to Foster Specialists, etc.

Sayama Corporation

Sayama Trading Co., Ltd. is specialized in import and sale of pressure sensors and flow sensors. Most of these high-quality products come from our overseas suppliers. Particularly, we supply high-pressure transducers and transmitters from Setra Systems (USA) and Keller AG (Switzerland) to our Japanese customers. These products can handle different measurement modes to measure atmospheric pressure. Furthermore, we supply digital manometers, low-pressure hand pumps and flow meter sensors for liquids and gases.

Sayama Trading Co., Ltd. has a broad product portfolio that allows customers to select the best product to match their requirements.

Global Environmental Forum

The Global Environmental Forum (GEF) is a non-profit organization located in Tokyo, Japan. Our missions are to conduct and support scientific research on global environmental issues and to disseminate those research findings to the public. Since its foundation in May 1990, we have actively engaged in many research projects of environmental monitoring, in raising public awareness of environmental issues, and in developing guidelines for environmental management of businesses.

MEIWAFOSIS Co., Ltd.

One of our main businesses is to introduce LI-COR (USA) instruments to the Japanese market. LI-COR has been manufacturing high performance and highly reliable gas analyzers for many years as a world-leading company. We are going to release LI–COR trace gas analyzers using the latest technology in the near future. We will continue to provide world-class instruments and contribute to the development of the atmospheric chemistry field together with LI–COR.

Taiyo Corporation

Solar Measurement Corporation – Being innovative and meeting the needs of tomorrow – The Solar Measurement Corporation markets electronic measuring instruments, signal measuring devices, control equipment, field instruments and process analyzers, including the products of the Yokogawa Electric Group, and offers a total solution to customers by also providing service and maintenance of measuring equipment and computing network.

iTEC Science Co., Ltd.

Our company, iTEC Science Co. Ltd., has been, for 10 years, marketing research equipment used in the physical, chemical and medical sciences. Our target area is mainly Tsukuba in Ibaraki Prefecture, but we serve the entire Kanto area. We deal with a large array of products, such as analysis equipment, instruments, consumable goods, reagents and chemicals for research, from over 300 suppliers. In addition, we also offer services such as reparation, modification and installation of research laboratories as well as homepage design. We handle any business promptly and with great flexibility.
SUURI-KEIKAKU Co., Ltd.
SUURI-KEIKAKU Co., Ltd. (SUR) established in 1967, is a pioneer consultant in the field of environmental issues and software development in Japan. SUR has 180 experienced specialists / consultants and a lot of clients such as national/ local governments, and private companies. SUR has also completed many consultations for governments outside of Japan. SUR is one of the most reliable consulting companies in Japan to solve environmental issues in various fields.

Springer
Springer Nature is one of the world’s leading global research, educational and professional publishers, home to an array of respected and trusted brands providing quality content through a range of innovative products and services. Springer Nature is also the world’s largest academic book publisher, publisher of the world’s most influential journals and a pioneer in the field of open research.

JAPAN AIRLINES Co., Ltd.
JAL has since 1993 continuously measured atmospheric CO₂ concentrations using its commercial flights and gathered atmospheric samplings from skies around the world. Since 2005, JAL is participating in the CONTRAIL project which is a cooperative research among the National Institute for Environmental Studies (NIES), Japan’s Meteorological Research Institute, JAMCO Corporation, JAL Foundation and Japan Airlines. Currently, JAL uses its Boeing 777 aircraft on regular routes to measure atmospheric CO₂ concentrations in the upper air, thus contributing to research on continuous long-term monitoring of global climate change.

Early Career Program Sponsors

Asia-Pacific Network for Global Change Research (APN)
Our mission is to enable investigations of changes in the Earth’s life support systems and their implications for sustainable development in the Asia-Pacific region through support for research and science-based response strategies and measures, effective linkages between science and policy, and scientific capacity development. This we do through supporting regional cooperation in research, enhancing capabilities, strengthening interactions among scientists and policy makers and providing scientific input to policy decision making and scientific knowledge to the public.

U.S. National Science Foundation (NSF)
NSF’s goals – discovery, learning, research infrastructure and stewardship – provide an integrated strategy to advance the frontiers of knowledge, cultivate a world-class, broadly inclusive science and engineering workforce and expand the scientific literacy of all citizens, build the nation’s research capability through investments in advanced instrumentation and facilities, and support excellence in science and engineering research and education through a capable and responsive organization.

U.S. National Aeronautics and Space Administration (NASA)
NASA’s mission is to pioneer the future in space exploration, scientific discovery and aeronautics research. To do that, thousands of people have been working around the world and in space for more than 50 years, trying to answer some basic questions. What’s out there in space? How do we get there? What will we find? What can we learn there – or learn just by trying to get there – that will make life better here on Earth?

U.S. National Oceanic and Atmospheric Administration (NOAA)
NOAA is an agency that enriches life through science. NOAA’s reach goes from the surface of the sun to the depths of the ocean floor as they work to keep citizens informed of the changing environment around them. From daily weather forecasts, severe storm warnings, and climate monitoring to fisheries management, coastal restoration and supporting marine commerce, NOAA’s products and services support economic vitality and affect more than one-third of America’s gross domestic product. NOAA’s dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information they need when they need it.
World Meteorological Organization (WMO), Global Atmosphere Watch (GAW)
The Global Atmosphere Watch Programme (GAW) is the research programme of the World Meteorological Organization (WMO) that provides a long-term international framework for integrated observations, analysis and assessment of atmospheric chemical composition. The programme is a collaboration of more than 100 countries and it relies fundamentally on the contributions of its Members to help build a single, coordinated global understanding of atmospheric composition and its change. The vision for the next decade of GAW is to grow the international network of high-quality atmospheric observations across local to global scales to drive high quality and impact science while co-producing a new generation of research-enabled products and services. GAW focal areas are GHGs, ozone, UV, aerosols, selected reactive gases, and total atmospheric deposition.

European Space Agency (ESA)
The ESA is Europe’s gateway to space. Its mission is to shape the development of Europe’s space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world. ESA is an international organization with 22 Member States. By coordinating the financial and intellectual resources of its members, it can undertake programs and activities far beyond the scope of any single European country.

International Union of Geodesy and Geophysics (IUGG)
IUGG is dedicated to the international promotion and coordination of scientific studies of Earth, such as the shape and dynamics of the Earth, gravitational and magnetic fields, earthquakes and elastic wave propagation, generation of magmas, volcanism and rock formation, hydrological cycle including snow and ice, and all aspects of the oceans, the atmosphere, ionosphere, magnetosphere and solar–terrestrial relations. IUGG encourages the application of this knowledge to societal needs, such as management of mineral resources, mitigation of natural hazards and environmental preservation.

International Association of Meteorology and Atmospheric Sciences (IAMAS)
We promote research in all atmospheric sciences, especially programs requiring international co-operation. We lead the Alliance for Capacity Transfer – a joint activity of IUGG, the World Meteorological Organization, and the U.S. University Corporation for Atmospheric Research. IAMAS is composed of 10 International Commissions on the following topics: Atmospheric Chemistry and Global Pollution, Atmospheric Electricity, Climate, Clouds and Precipitation, Dynamic Meteorology, Middle Atmosphere, Planetary Atmospheres and their Evolution, Polar Meteorology, Ozone, and Radiation.

IGAC Monsoon Asia and Oceania Networking Group (MANGO)
Our objective is to form a cohesive network of atmospheric scientists in the Asian monsoon region, facilitate collaboration between Asian and international scientists, and foster the next generation of scientists in this region. More concretely, we enhance communication between scientists in Monsoon Asia and the international community on issues such as changes in atmospheric composition, biomass burning, biogenic and anthropogenic emissions, air quality, and mitigation options. We also explore opportunities for funding and infrastructure needed to foster scientific research, capacity building, and regional collaborations.

IGAC China Working Group
Chinese atmospheric chemists have been conducting frontier research for forty years on urban and regional air pollution and its impacts on climate and health. To integrate Chinese research experience in IGAC research, a national WG was established. Its aim is to encourage leadership of Chinese atmospheric scientists in international research programs, strengthen ties with IGAC to facilitate the implementation of research projects in China, provide advice/consultation on major research plans in atmospheric chemistry in China to promote funding support, and to provide a platform in China to facilitate the academic growth of young researchers in atmospheric chemistry.

International Science Council, Regional Office for Asia and the Pacific
The International Science Council (ISC) is a non–governmental organization that brings together 40 international scientific unions and associations and over 140 national and regional scientific organizations. Our vision is to advance science and make it public. We help evidence–informed decision–making; stimulate and support international scientific research; promote the advancement of scientific creativity and relevance in all parts of the world; and defend the free and responsible practice of science. With co–sponsored international research programs and networks, our activities encompass a broad range of issues, from global sustainability, poverty, urban health and well–being, and disaster risk reduction, to data, observing systems and science advice to governments.
Institute for Space-Earth Environmental Research (ISEE), Nagoya University

Institute for Space–Earth Environmental Research, Nagoya University is a Joint Usage/Research Center in Japan that uniquely combines two fields of research: space science and Earth science. ISEE investigates a variety of phenomena in the system of the Earth, the Sun, and the universe, and aims to contribute to solutions for global environmental issues and development of human society spreading out into space.

Institute for Advanced Sustainability Studies (IASS)

The IASS conducts research with the goal of identifying, advancing, and guiding processes of social change towards sustainable development in Germany and abroad. Its research practice is transdisciplinary, transformative, and co-creative. The IASS cooperates with partners in academia, political institutions, administrations, civil society, and the business community to understand sustainability challenges and generate potential solutions. A strong network of national and international partners supports the work of the institute. Among its central research topics are the energy transition, emerging technologies, climate change, air quality, systemic risks, governance and participation, and cultures of transformation. The institute is funded by the research ministries of the Federal Government of Germany and the State of Brandenburg.

National Institute for Environmental Studies (NIES)

The National Institute for Environmental Studies (NIES) is Japan’s only research institute that undertakes a broad range of environmental research in an interdisciplinary and comprehensive manner. Since its inception in 1974, NIES has played a vital role in solving a variety of environmental problems. In order to produce scientific findings on environmental protection, NIES carries out research projects that include consolidating the institute’s research foundation through basic research, data acquisition and analysis, preservation and provision of environmental samples, and other efforts. NIES conducts broad–based research that covers the environmental science field in its entirety, promote comprehensive research that seeks to cover everything from the basics to social implementation, further advance and enhance research networks domestically and globally, and carry out research of a high level that contributes to broadly understanding and solving environmental problems, thereby appropriately disseminating our store of scientific knowledge.
# Conference Schedule

**Day 1  Tuesday 25 Sep.**
- **Opening Ceremony**
  - 9:00–10:00
- **Keynote: Maggie Tolbert**
  - 10:00–10:30
- **Session 1: AC & People**
  - 9:30–10:30
- **Session 2: AC & Fundamentals**
  - 11:15–12:15
- **Coffee Break/Posters**
  - 12:30–14:00
- **Lunch**
  - 12:30–14:00
- **Poster Session**
  - 16:00–18:00
- **Conference Banquet & Dance Party**
  - 18:30–23:00

**Day 2  Wednesday 26 Sep.**
- **Coffee Break/Posters**
  - 9:00–9:30
- **Session 1: AC & People**
  - 9:30–10:30
- **Session 2: AC & Fundamentals**
  - 11:15–12:15
- **Coffee Break/Posters**
  - 15:30–16:00
- **Lunch**
  - 12:30–14:00
- **Poster Session**
  - 16:00–18:00
- **Coffee Break/Posters**
  - 18:00–19:00

**Day 3  Thursday 27 Sep.**
- **Keynote: Hajime Akimoto**
  - 9:00–9:30
- **Keynote: Ian Galbally**
  - 10:00–10:30
- **Session 1: AC & People**
  - 9:30–10:30
- **Session 2: AC & Fundamentals**
  - 11:15–12:15
- **Coffee Break/Posters**
  - 12:30–14:00
- **Lunch**
  - 12:30–14:00
- **Poster Session**
  - 16:00–18:00
- **Conference Banquet & Dance Party**
  - 18:30–23:00

**Day 4  Friday 28 Sep.**
- **Keynote: Maggie Tolbert**
  - 9:00–9:30
- **Session 4: AC & Climate/Weather**
  - 10:00–10:30
- **Session 3: AC & Ecosystems**
  - 11:15–12:15
- **Coffee Break/Posters**
  - 15:30–16:00
- **Lunch**
  - 12:30–14:00
- **Poster Session**
  - 16:00–18:00
- **Coffee Break/Posters**
  - 18:00–19:00

**Day 5  Saturday 29 Sep.**
- **Keynote: Maggie Tolbert**
  - 9:00–9:30
- **Session 5: Challenging the Future**
  - 10:00–10:30
- **Session 3: AC & Ecosystems**
  - 11:15–12:15
- **Coffee Break/Posters**
  - 12:30–14:00
- **Closing Ceremony**
  - 12:30–13:00

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**Title of the Side Meeting | Day | Time | Room No.**

| 4th International Workshop on Heterogeneous Kinetics Related to Atmospheric Aerosols | Sep. 24 (Mon) | 9:00–18:00 | Room 61 |
| Chemistry Climate Model Initiative (CCMI) | Sep. 25 (Tue) | 18:30–19:30 | Room 54 |
| IGAC Southern Hemisphere Working Group | Sep. 25 (Tue) | 18:30–19:30 | Room 61 |
| AMIGO/IGAC project | Sep. 25 (Tue) | 18:30–19:15 | Room 62 |
| COALA | Sep. 25 (Tue) | 18:30–20:30 | Room 61 |
| IGAC Americas Working Group (Latin America and the Caribbean) | Sep. 25 (Tue) | 19:30–20:30 | Room 62 |
| ANCA: African Group of Atmospheric sciences | Sep. 25 (Tue) | 19:30–20:30 | Room 63 |
| Global Emissions Initiative (GEIA) | Sep. 26 (Wed) | 18:30–19:15 | Room 54 |
| PACES Town Hall | Sep. 26 (Wed) | 18:30–19:30 | Room 61 |
| CSSP-China Project | Sep. 26 (Wed) | 18:30–19:30 | Room 63 |
| TROPOMI Data User Workshop | Sep. 26 (Wed) | 18:45–20:00 | Room 62 |
| Monitoring, Analysis and Prediction of Air Quality (MAP-AG) | Sep. 26 (Wed) | 19:30–20:30 | Room 54 |
| Cryosphere and Atmospheric Chemistry (CATCH) | Sep. 26 (Wed) | 19:30–20:30 | Room 61 |
| Effect of Megacities on the transport and transformation of pollutants on the Regional and Global scales (EMeGe) | Sep. 28 (Fri) | 18:00–21:00 | Room 54 |
| IGAC-MANGO | Sep. 28 (Fri) | 18:00–19:00 | Room 61 |
| Atmospheric Composition and the Asian Monsoon (ACAM) | Sep. 28 (Fri) | 19:00–20:00 | Room 61 |
| Future Earth – China Working Group | Sep. 28 (Fri) | 19:00–19:30 | Room 62 |
| Future Earth – who we are | Sep. 29 (Sat) | 11:30–14:00 | Room 61 |