

16TH ANNUAL MEETING
ASIA OCEANIA GEOSCIENCES SOCIETY

AOGS2019

28 Jul to 2 Aug

AOGS REGIONAL ADVISORY COMMITTEE
// INFORMATION BOOKLET





Asia Oceania Geosciences Society
www.asiaoceania.org

Session Proposal Closes **15 Oct 2019**

Log on to www.asiaoceania.org

Email Enquires to info@asiaoceania.org



17th Annual Meeting

**28 Jun to
4 Jul 2020**

**Vivaldi Park
Ski Resort,
Hongcheon**

Supported By:

- Korean Society of Earth and Exploration Geophysicists
- Geological Society of Korea
- Korean Society of Oceanography
- Korean Meteorological Society
- Korean Society of Atmospheric Environment
- Korean Space Science Society
- Korean Astronomical Society
- Korean Society of Economic and Environmental Geology

Organized By:



Asia Oceania Geosciences Society
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AGOS - In Asia for Asia and the World

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Gangwon Convention & Visitors Bureau

// INTRODUCTION

I remember vividly watching TV on February 21, 1972, waiting for the arrival of President Nixon at the Beijing International Airport. And one unforgettable scene from a commercial advertisement always stays in my mind. It says simply: We know the real, but we aim for the ideal. The AOGS is basically an ideal that is to integrate the geoscience community in the Asia-Pacific region from north to south, and from east to west. The formation of the Regional Advisory Committee with a mission to enhance the participation of researchers from India and the ASEAN nations is to remind ourselves of this ideal. Yes, AOGS has made good progress since its first annual meeting in Singapore in 2004. We are therefore in a position to proceed to build up the Society further in the next 10 years.

This is not just an ideal, but also a reality. The figure below illustrates the proportional distributions of the world GDP in 2017. It shows how over a span of 20 years, with the founding year of AOGS in the middle, the whole Asian region has gradually expanded its economic power in relative terms. These diagrams actually do not do justice to the real economic and technical progress made in absolute terms by the whole region. But along with increasing prosperity, come along the threats of environmental pollution, flooding and water shortage. A new generation of geoscientists has to be trained to counter and mitigate these mounting threats and natural disasters, not to mention the urgent needs in establishing networks and infrastructures for basic science. This is the reason for the AOGS Council to form the Regional Advisory Committee (RAC). The membership is composed of researchers and educators from leading academic institutions in Asia and Oceania. Each RAC member should produce a corresponding national/regional network (called Local Advisory Committee, or LAC) to support this project. To maintain dynamism and proactive attitude, the memberships of RAC and LACs would be flexible and rolling.

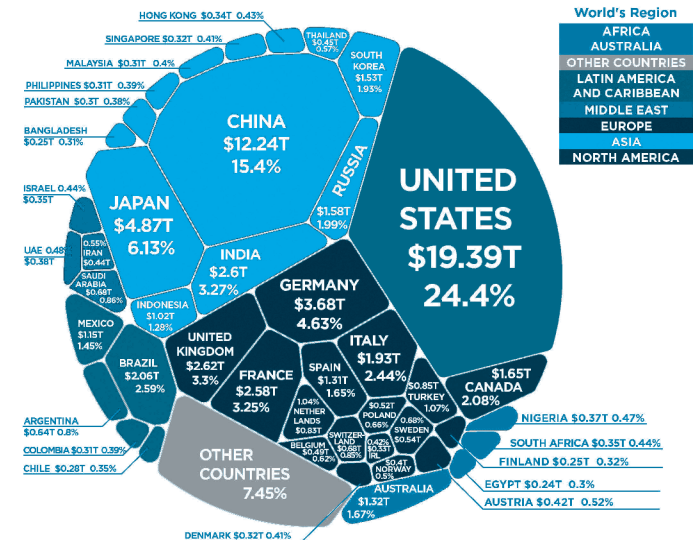


Figure 1. The Voronoi diagram of GDP distribution by country in 2017.
Figure source: <https://www.visualcapitalist.com/80-trillion-world-economy-one-chart/>



In this format, it is hoped that the RAC will pave the way in generating more active participation of ASEAN scientists in the planning activity of scientific sections and sessions in cooperation with the AOGS members in East Asia and Western Pacific. In this manner, the scope would expand and transform as with the relationship between G7 and G20, if an analogy must be found. This booklet contains information collected from RAC members concerning research opportunities and exchange study possibilities. Since we are still in the process of building up the communication network and setting up the framework, the format and content must be incomplete. Therefore we welcome very much your inputs and suggestions so that we can improve, and to make our ideal into reality.

The painter John Minton (1917-1957) once said that the important thing is to be there when the picture is painted. And the musician Frank Zappa (1940-1993) would say the most important thing in art is the frame. So, please do come by the AOGS Infinity exhibition booth, where you can be there when the picture is painted, or, at least, you can see the frame.

Wing-Huen Ip

Chair, AOGS RAC

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http://www.asiaoceania.org/society/public.asp?view=office_bearer_rac#RAC

June, 29, 2019



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// COOPERATIVE ACADEMIC PROGRAMS

- Peking University has Master degree/Doctor degree programs in “Space Physics”, “Solid Geophysics” and “Remote Sensing” & “Geographic Information System”.

For more information, please visit the webpage of “School of Earth and Space Sciences @ Peking University” by clicking the following weblink: <https://sess.pku.edu.cn/english/graduate/admission/index.htm>

- College of Earth and Planetary Sciences @ University of Chinese Academy Sciences, please visit: <https://earthucas.ac.cn/index.php/en/tea/lab>

- Several universities in Japan (ex. Univ. of Tsukuba, Univ. of Tokyo etc.), which have both master/doctor programs. Also nationally there are more universities like Kyoto Univ. or Tohoku Univ., Hokkaido Univ., Osaka Univ., and Kyushu Univ.

- In Korea, the University of Science and Technology (UST) was set up by government-supported national institutes. This includes KIOST (Korea Institute of Ocean Science and Technology) and KIGAM (Geological Survey of Korea). They teach practical knowledge that can be used right away. This program is very popular for scientists coming from developing countries. <https://www.ust.ac.kr/eng.do>

- National Pusan University - Department of Atmospheric Sciences, (which encompasses all disciplines of Atmospheric sciences offering BS, MS and PhD) <https://atmos.pusan.ac.kr/atmos/index.do>

- National Pusan University - Department of Climate System (graduate course offering MS and PhD) <http://climatesystem.pusan.ac.kr/climate/index.do>

- International Ph.D. Program in Environmental Science and Technology, University System of Taiwan (UST-EST)

(E-mail: degree@csrsr.ncu.edu.tw, Website: https://www1.csrsr.ncu.edu.tw/degree/degree_info.php)

- National Central University - Master of Science Program in Remote Sensing Science and Technology
(E-mail: degree@csrsr.ncu.edu.tw, Website: https://www1.csrsr.ncu.edu.tw/degree/degree_info.php)

- Chulalongkorn University – Master of Science in Risk and Disaster Management
(E-mail: grad@chula.ac.th, inter_53@hotmail.com
Website: <http://rdm.grad.chula.ac.th>)

- Chulalongkorn University – Department of Industrial Engineering (B/ Eng., M. Eng., PhD; Website: <http://www.ie.eng.chula.ac.th/>)

- ASEAN and India have opened collaborative research funding including support to ASEAN researchers to visit Indian Institutions. For example, Indian Institute of Science Education and Research Kolkata is interested in hosting international students for PhD program in the interdisciplinary areas of sustainable groundwater, coastal biogeochemistry, and seismology, etc.



- Universitas Gadjah Mada's Geoscience Research Center (Indonesia) has several geophysics Study Programs including Environmental Geography Study Program; Geology Engineering Program; Meteorology Study Program and Climatology Study Program

// HIGH-PRIORITY RESEARCH TOPICS FOR AOGS

■ Development of underwater cable observatory system for early warning of earthquake tsunami using latest technology and funding provided by ASEAN would be a very important issue that can be advanced by AOGS. Many countries in the southeast Asia will benefit if such infrastructure and facilities can be installed.

■ Global open ocean research in Western Pacific and Indian Ocean using research vessel (Isabu, Onnuri, Araon) (OS, SE, BG). This would include onboard training and international collaboration.

■ Exploration for mineral resources at sea.

■ Coastal management and pollutions.



■ Health of coastal ecosystems; Carbon and nitrogen cycling in coastal ecosystems; Microbial ecology and Biogeochemistry

■ Using big data and machine learning algorithms to understand and predict important issues in the society (computational sciences). Issues would include resilience to natural disaster, public health and environmental change issues.

■ Earthquake sciences: (a) Physics of Earth Interior; (b) Geodynamics; (c) Exploration Geophysics; (d) Electromagnetism of Earth

// HIGH-PRIORITY RESEARCH TOPICS FOR AOGS

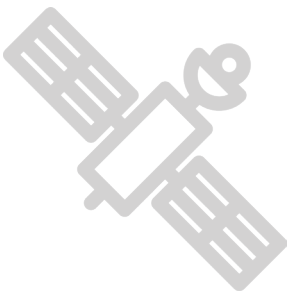
Remote Sensing Information Science: (a) Digital Photogrammetry and Remote Sensing Digital Imaging; (b) Microwave Remote Sensing, Hyperspectral Remote Sensing and Lidar Remote Sensing; (c) Remote Sensing Information Processing and Application; (d) Ecological remote sensing and data assimilation; (e) Satellite Navigation Technology and Application; (f) Planetary remote sensing.

Predictability study, which contributes for us to understand the source of errors or uncertainty in the weather forecasts, thus may reduce the weather-related disasters.

Environmental studies: (a) Fine dust issues (atmospheric chemistry, air quality); (b) Abrupt climate changes (typhoon and flooding, abnormally hot summer); (c) Hydrology issues (underground water) related with overdevelopment.

Extreme weather: (a) Monsoon Climates Over South, East and Southeast Asia in a Warming Environment ; (b) The Science and Prediction of Tropical Cyclones; (c) Regional Atmospheric Numerical Modeling and Observations; (d) Natural Hazards and Disaster Risk

Space science: (a) Solar and heliophysics (interplanetary physics); (b) magnetospheric physics and space plasma physics; (c) ionospheric physics and radio wave propagation; (d) space weather; (e) space instrumentation and space exploration; (f) plasma, gas, and dust dynamics of planets, asteroids, and comets.



// SCIENTIFIC EXCHANGE AND STUDY OPPORTUNITIES

Universitas Gadjah Mada is interested in

- Internship for graduate student at Department
 - Project collaboration in the topic of Seismology / Volcanology
- (Contact Point: Fajar Adi Kusumo, E-mail: f_adikusumo@ugm.ac.id)

Coastal biogeochemistry and microbial ecology for early-career ASEAN researcher
(Contact Point: Prof. Punyasloke Bhadury, E-mail: pbhadury@gmail.com)

The University System of Taiwan (UST) offers the following graduate programs for international students:

Remote Sensing of Environment

(Contact Point: Prof. Tang-Huang Lin, E-mail: thlin@csrsr.nctu.edu.tw)

The fundamentals of remote sensing science and applications of measurements from Earth-observing satellites and aircraft, with focus on calibration and fusion of passive and active remote sensing data in the optical and microwave spectral bands.

The 3S disciplines of remote-sensing(RS), geographic information systems (GIS), and global navigation satellite systems (GNSS), with focus on geospatial data acquisition, data processing, analysis, integrated applications and system development for the environmental issues.

Environmental Engineering

(Contact Point: Prof. Sue-Min Chang, E-mail: chang@mail.nctu.edu.tw)

Subsurface hydrology and industrial wastewater treatment– microbial toxicity and riskassessment, nano-catalyst and membrane technology for water treatment
Development of control devices for nanoparticle and gaseous air pollutants
Green technology technologies for sustainable environment

Environmental Chemistry and Molecular Science

(Contact Point: Prof. Ruey-An Doong, E-mail: radoong@mx.nthu.edu.tw)

Environmental nanotechnology - development of novel devices for investigation and applications in environmental monitoring, photo-catalysis, and remediation/treatment

Atmospheric chemistry - monitoring and characterization of physicochemical processes and determination of the effects of nano-and micro-particles on contaminant transport in geological systems as well as on climate and human health

Environmental and Occupational Health Science

(Contact Point: Prof. Mei-Lien Chen, E-mail: mlchen@ym.edu.tw)

Study of highly concerned chemicals in air pollution, environmental stressors
Management of poisoning by various environmental stressors -mechanism of toxicity, exposure assessment, health effect, control of pollution

// JOB OPPORTUNITIES

Peking University has University-level positions for international graduate students:
Master and Doctoral degree programs for international students:
<http://www.isd.pku.edu.cn/HOME/ADMISSION.htm>

Peking University has University-level positions/announcements (examples) for post-doctors:

“National Postdoctoral Innovation Plan”
<https://postdocs.pku.edu.cn/tzgg/60572.htm>

“Postdoctoral Boya Program, Peking University”
<https://postdocs.pku.edu.cn/tzgg/90438.htm>

Peking University has School-level positions for post-doctors:
A few postdoctoral positions financed by SESS (School of Earth and Space Sciences@PKU) are selected annually in March, June and September, in accordance with the procedures of cooperative tutor selection, post-doctoral selection working group deliberation and recommendation, and school approval. Postdoctoral positions can also be self-funded by the co-advisors (faculty members of SESS).

Listing of job opportunities in South Korea:
<https://www.iccp.ibs.re.kr/jobs> and <https://www.hibrain.net/>

// SUGGESTIONS OF TOPICS FOR FUTURE SCIENTIFIC SESSIONS

It would be good to have two kind of sessions, one is “general” or “permanent” session, such as tropical cyclone, meso-scale, data assimilation, monsoon, etc. with some smaller sub-sessions, another is “special” or “timely” session.

Hazard mitigation issues in ASIAN countries

The post AMY (Asian Monsoon Years)

Monsoon Climate: past, present and future

Interdisciplinary Geosciences: Remote Sensing of Environment
(Prof. Tang-Huang Lin, E-mail: thlin@csrsr.ncu.edu.tw)

Impacts of Urban Development on Environmental and Meteorological
(Prof. Tang-Huang Lin, E-mail: thlin@csrsr.ncu.edu.tw)

Atmospheric Sciences: Application of Satellite Data to Weather Prediction
(Prof. Chian-Yi Liu, E-mail: cyliau@csrsr.ncu.edu.tw)

Hydrological Sciences: Hydrological and Environmental monitoring
(Prof. Kuo-Hsin Tseng, E-mail: khtseng@csrsr.ncu.edu.tw)

Coastal carbon cycling in a global perspective
(Prof. Punyasloke Bhadury, E-mail: pbhadury@gmail.com)

Health of coastal ecosystems for sustainable blue carbon economy
(Prof. Punyasloke Bhadury, E-mail: pbhadury@gmail.com)



// NOTES

// NOTES

The Second AOGS-EGU Joint Conference on: **New Dimensions for Natural Hazards in Asia**

Yogyakarta, Indonesia

Four days during September or October 2020

Email enquiries to nathazards@meetmatt.net



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