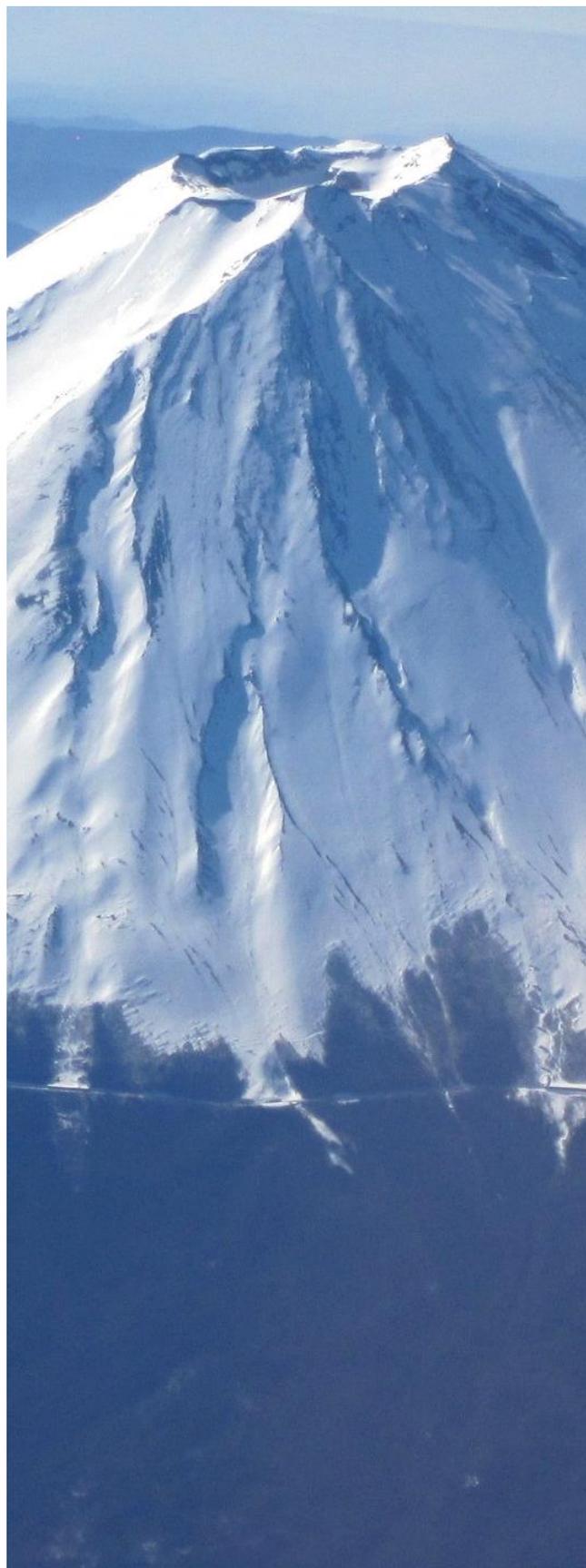




2017 Symposium on Atmospheric Chemistry and Physics at Mountain Sites

November 6th -10th, 2017
Gotemba-kogen-resort Toki-no-sumika
Gotemba, Shizuoka, Japan



Hosted by

ACPM2017 Organizing Committee

Co-hosted by



Certified non-profit organization
Mount Fuji Research Station



Atmospheric Science Research Division,
Research Institute for Science and
Technology, Tokyo University of Science

Organization

International Advisory Board

Yuichiro Miura	NPO MFRS, Vice-President
Masako Horii	NPO MFRS, Vice-President
Yasunobu Iwasaka	NPO MFRS, University of Shiga Prefecture
A. Gannet Haller	USA, Desert Research Institute
Dan Jaffe	USA, University of Washington Bothell
Johannes Stähelin	Switzerland, ETH Zürich
Neng-Huei Lin	Taiwan, National Central University
Yong Pyo Kim	Korea, Ewha Womans University
Chak K.Chan	China, City University of Hong Kong

Organizing Committee

Chairperson

Shiro Hatakeyama NPO MFRS President, Center for Environmental Science in Saitama

Vice-Chairperson

Kazuhiko Miura NPO MFRS, Tokyo University of Science
Hiroshi Okochi NPO MFRS, Waseda University

Committee Member

Kazuma Aoki	University of Toyama <i>Program</i>
Yukiko Dokiya	NPO MFRS <i>Public Relations</i>
Yasuhito Igarashi	NPO MFRS, Meteorological Research Institute
Yoko Iwamoto	NPO MFRS, Hiroshima University
Masashi Kamogawa	NPO MFRS, Tokyo Gakugei University <i>Finance</i>
Naoki Kaneyasu	NPO MFRS, National Institute of Advanced Industrial Science and Technology
Shungo Kato	NPO MFRS, Tokyo Metropolitan University <i>Venue</i>
Naoya Katsumi	NPO MFRS, Ishikawa Prefectural University <i>Banquet</i>
Hiroshi Kobayashi	NPO MFRS, University of Yamanashi <i>Tour</i>
Tatsuhiko Mori	NPO MFRS, Tokyo University of Science
Yukiya Minami	NPO MFRS, Ishikawa Prefectural University <i>Banquet</i>
Yoshiyuki Sakurai	NPO MFRS, Yaizu Municipal Government <i>Public Relations</i>
Kazuo Osada	NPO MFRS, Nagoya University <i>Program</i>
Kojiro Shimada	NPO MFRS, Waseda University <i>Venue</i>
Hiroshi Tanimoto	National Institute for Environmental Studies
Ken-ichi Ueno	University of Tsukuba
Ryuichi Wada	NPO MFRS, Teikyo University of Science <i>Tour</i>
Masanori Yabuki	Kyoto University <i>Program</i>
Shin-ichi Yonemochi	NPO MFRS, Center for Environmental Science in Saitama <i>Venue</i>

Welcome Message

Dear Researchers,

We are very happy to announce that the Symposium on Atmospheric Chemistry and Physics at Mountain Sites (ACPM2017) will be held in Gotemba, Shizuoka Prefecture in Japan from November 6 to 10 in 2017.

The city of Gotemba is located in the eastern part of Shizuoka Prefecture, near the base of the majestic Mt. Fuji. Gotemba is an ideal spot for sightseeing areas around the mountain, including Fuji-Goko (Fuji five lakes) and Hakone.

We look forward to hosting this event and making sure that every researcher in the field of atmospheric chemistry and physics at mountain sites has a nice and comfortable stay.

We hope that researchers from all over the world will participate in this conference, exchanging the most up-to-date information, and gaining acquaintance with other atmospheric scientists.

富士史郎

Shiro Hatakeyama, Ph.D

Chairperson

ACPM2017 Organizing Committee

Schedule of Events

DATE	VENUE/	1F Lobby Lounge	
Mon, Nov. 6	16:00		
	16:30	Registration 16:00-20:00 (1F Lobby)	Reception
	17:00	Ice Breaker 17:00-20:00 (1F Lobby Lounge)	
	20:00		

DATE	VENUE/	1F Lobby Lounge	1F Meeting Room 2
Tue, Nov. 7	8:00	Registration 08:00-17:30 (1F Lobby)	
	8:30		
		One-day Trip 8:20 Assemble at Hotel Lobby (8:30 - 16:00)	
	16:00		Exhibition Installation 15:00-18:00
	18:00		

DATE	VENUE/	2F SAKURA	1F Meeting Room 2
Wed, Nov. 8	8:00	Registration 8:00-17:30 (2F Lobby)	Exhibition 8:00-17:00
	9:00	Welcome Address	
	9:10	A: Gaseous components at mountain sites [A01-A03] 9:10-10:10 Coffee Break	
	10:10		
	10:30	A: Gaseous components at mountain sites [A04-A07] 10:30-11:50	
	11:50	Lunch Break	
	13:20	B: Background baseline observations at mountain sites [B01-B05] 13:20-15:00	
	15:00	Coffee Break	
	15:20	C: Planetary boundary layer at mountain sites and transport modeling [C01-C05] 15:20 -17:00	
	17:00		

DATE	VENUE/	2F SAKURA	1F Meeting Room 2
Thu, Nov. 9	8:00		
	8:40	Registration 8:00-17:30 (2F Lobby)	Exhibition 8:00-17:00
	10:00	D: Aerosol particles at mountain sites [D01-D04] 8:40-10:00	
	10:20	Coffee Break	
	12:00	D: Aerosol particles at mountain sites [D05-D09] 10:20-12:00	
	13:30	Lunch Break	
	14:30	E: Aerosol optical depth and aerosol optical properties [E01-E03] 13:30-14:30	
	15:30	F: Studies relating to mountain atmosphere [F01-F03] 14:30-15:30	
	15:40	Coffee Break	
	17:40		Poster session [P01-P34] 15:40-17:40
	18:00	Banquet (2F FUJI)	Exhibition Dismantling
20:00			

DATE	VENUE/	2F SAKURA	1F Meeting Room 2
Fri, Nov. 10	8:00		
	8:30	Registration 8:00-17:30 (2F Lobby)	
	9:30	G: Chemistry of fog/cloud, rain, and dew at mountain sites [G01-G04] 8:40-10:00	
	10:00	Coffee Break	
	11:00	G: Chemistry of fog/cloud, rain, and dew at mountain sites [G05-G09] 10:20-12:00	
	12:00	Closing Remarks	
	12:30		

Technical Program

November 8th, 2017

Welcome address

09:00–09:05

Shiro Hatakeyama
Chairperson, ACPM2017 Organization Committee
NPO MFRS President, Center for Environmental Science in Saitama

09:05–09:10

Koichi Sugiyama
Director General, Shizuoka Institute of Environment and Hygiene

A: Gaseous components at mountain sites

Chair: Drs. Kato & Necki

09:10–09:30 (A-01) Long-term monitoring for atmospheric CO₂ concentration at the summit of Mt Fuji, Japan

Shohei Nomura and Hitoshi Mukai
Center for Global Environmental Research, National Institute for Environmental Studies, Japan

09:30–09:50 (A-02) Over 20 years of main greenhouse gases measurements at the mountain station Kasprowy Wierch, southern Poland

Lukasz Chmura^{1,2}, Jaroslaw M. Necki¹, Jakub Bartyzel¹, Michal Galkowski¹,
Wojciech Wolkowicz³, Damian Zięba¹, Mirosław Zimnoch¹ and Kazimierz Rozanski¹
¹*Faculty of Physics and Applied Computer Science, AGH-University of Science and Technology, Poland*
²*Institute of Meteorology and Water Management, National Research Institute, IMGW-PIB, Poland*
³*Polish Geological Institute – National Research Institute, Poland*

09:50–10:10 (A-03) Greenhouse gases at Kasprowy Wierch, Tara, Europe. Can mountain station be useful?

Jarosław M. Necki¹, Jakub Bartyzel¹, Lukasz Chmura^{1,2},
Michal Galkowski¹, Wojciech Wolkowicz³ and Mirosław Zimnoch¹
¹*AGH-University of Science and Technology, Kraków, Poland*
²*National Research Institute, IMGW-PIB Branch of Krakow, Poland*
³*Polish Geological Institute – National Research Institute, Warsaw, Poland*

Coffee Break (20 min.)

10:30–10:50 (A-04) Ozone, aerosol and carbon gases at the Mt. Bachelor observatory

Dan Jaffe¹, Arlyn Andrews² and Jonathan Koffler² (To be presented by I.B. McCubbin)
¹*University of Washington, USA*
²*NOAA-GMD, USA*

10:50–11:10 (A-05) Long-term changes in free tropospheric ozone in northern mid-latitudes: comparison between alpine measurements and chemistry climate model SOCOL

Johannes Stählerin¹, Fiona Tummon¹, Laura Revell²,
Andrea Stenke¹, and Thomas Peter¹

¹*Institute for Atmospheric and Climate Science, ETH Zürich, Switzerland*

²*Bodeker Scientific Christchurch, New Zealand*

11:10–11:30 (A-06) Changes in springtime tropospheric ozone observed at Mt. Happo, Japan: Interplay of Asian emissions and long-range transport

Sachiko Okamoto, Kohei Ikeda and Hiroshi Tanimoto

Center for Global Environmental Research, National Institute for Environmental Studies, Japan

11:30–11:50 (A-07) CO and O₃ observation at the summit of Mt. Fuji during summer

Shungo Kato¹, Hiroshi Okochi² and Kazuhiko Miura³

¹*Faculty of Urban Environmental Sciences, Tokyo Metropolitan University, Japan*

²*Graduate School of Creative Science and Engineering, Waseda University, Japan*

³*Faculty of Science Division 1, Tokyo University of Science, Japan*

Lunch Break (90 min.)

B: Background baseline observations at mountain sites

Chair: Drs. Hatakeyama, Lin, & Collaud Coen

13:20–13:40 (B-01) Overview of ten-year measurements at Lulin Atmospheric Background Station (LABS, 2,862m MSL) in East Asia

Neng-Huei (George) Lin^{1,2,3}, Guey-Rong Sheu¹, Chung-Te Lee², Chang-Feng Ou-Yang¹,
Jia-Lin Wang³, Shang-Hsiung Wang¹, Ta-Chih Hsiao³, Kai Hsien Chi⁴, Hao-Ping Chia¹,
Ming-Tung Chuang⁵, Shuen-Chin Chang⁶, Brent Holben⁷, Russel Schnell⁸,
John Ogren⁸, and Patrick Sheridan⁸

¹*Department of Atmospheric Sciences, National Central University, Taiwan*

²*Graduate Institute of Environmental Engineering, National Central University, Taiwan*

³*Department of Chemistry, National Central University, Taiwan*

⁴*Institute of Environmental and Occupational Health Sciences, National Yang Ming University, Taiwan*

⁵*Department of Mechanical Engineering, National Central University, Taiwan*

⁶*Environmental Protection Administration, Taiwan*

⁷*Goddard Space Flight Center, NASA, Greenbelt, USA*

⁸*Global Monitoring Division, ESRL, NOAA, Boulder, USA*

13:40–14:00 (B-02) Characteristics of volatile organic compounds at Lulin Atmospheric Background Station, Taiwan

Chang-Feng Ou-Yang¹, Chih-Chung Chang², Jia-Lin Wang³,
Guey-Rong Sheu¹, and Neng-Huei Lin¹

¹*Department of Atmospheric Sciences, National Central University, Taiwan*

²*Research Center for Environmental Changes, Academia Sinica, Taiwan*

³*Department of Chemistry, National Central University, Taiwan*

14:00–14:20 (B-03) Trend of atmospheric mercury at the Lulin Atmospheric Background Station in 2006-2016 and its implication

Guey-Rong Sheu¹, Nguyen Ly Sy Phu¹, Da-Wei Lin¹,
Neng-Huei Lin¹, and Leiming Zhang²

¹*Department of Atmospheric Sciences, National Central University, Taiwan*

²*Science and Technology Branch, Environment and Climate Change Canada, Canada*

14:20–14:40 (B-04) Ten years research at Mount Fuji research station

Yukiko Dokiya¹, Shiro Hatakeyama², Kazuhiko Miura³, Hiroshi Okochi⁴,
Masashi Kamogawa⁵, Naoki Kaneyasu⁶, Yoko Katayama⁷, Kazuya Sasaki⁸,
Shungo Kato⁹, Yukiya Minami¹⁰ and Hiroshi Kobayashi¹¹

¹*NPO Mount Fuji Research Station, Japan*

²*Center for Environmental Science in Saitama, Japan*

³*Tokyo University of Science, Japan*

⁴*Waseda University, Japan*

⁵*Tokyo Gakugei University, Japan*

⁶*National Institute of Advanced Industrial Science and Technology, Japan*

⁷*Tokyo University of Agriculture and Technology, Japan*

⁸*Hirosaki University, Japan*

⁹*Tokyo Metropolitan University, Japan*

¹⁰*Ishikawa Prefectural University, Japan*

¹¹*University of Yamanashi, Japan*

14:40–15:00 (B-05) Chemical composition of PM_{2.5} from mountain and foothill sites in upper northern Thailand during biomass burning season in 2015

Somporn Chantara^{1,2}, Chanakarn Khamkaew², Sukanya Prawan²,
Chung-Te Lee³ and Neng-Huei Lin⁴

¹*Environmental Chemistry Research Laboratory, Chemistry Department, Faculty of Science,
Chiang Mai University, Thailand*

²*Environmental Science Research Center, Faculty of Science, Chiang Mai University, Thailand*

³*Graduate Institute of Environmental Engineering, National Central University, Taiwan*

⁴*Department of Atmospheric Sciences, National Central University, Taiwan*

Coffee Break (20 min.)

C: Planetary boundary layer at mountain sites and transport modeling

Chair: Drs. Hatakeyama, Lin, & Collaud Coen

15:20–15:40 (C-01) Ceilometer based automatic measurement of the local CBL and the continuous aerosol layer at the Jungfraujoch

Y. Poltera^{1,3}, G. Martucci¹, M. Collaud Coen¹, M. Hervo¹,
L. Emmenegger², S. Henne², D. Brunner² and A. Haeferle¹

¹Federal Office of Meteorology and Climatology, MeteoSwiss, Switzerland

²Swiss Federal Laboratories for Materials Science and Technology, Switzerland

³Institute for Atmospheric and Climate Science, ETH Zürich, Switzerland

15:40–16:00 (C-02) The topography contribution to the influence of the planetary boundary layer at high altitude stations

M. Collaud Coen¹, E. Andrews², and D. Ruffieux¹

¹Federal office of Meteorology and Climatology, MeteoSwiss, Switzerland

²University of Colorado, CIRES, USA

16:00–16:20 (C-03) High-resolution numerical simulation of turbulent flows and dry deposition in mountainous forest

Hiromasa Nakayama¹ and Genki Katata²

¹Nuclear Science and Engineering Center, Japan Atomic Energy Agency, Japan

²Institute for Global Change Adaptation Science (ICAS), Ibaraki University, Japan

16:20–16:40 (C-04) Aerosol vertical profiles near Mt. Fuji using a micropulse lidar

Masanori Yabuki¹, Kazuhiko Miura², and Masataka Shiobara³

¹Research Institute for Sustainable Humanosphere, Kyoto University, Japan

²Faculty of Science Division I, Tokyo University of Science, Japan

³National Institute of Polar Research, Japan

16:40–17:00 (C-05) Chemical evolution of PM_{2.5} compositions in long-range transport biomass burning plume and short-range transport from anthropogenic pollutants to Mt. Lulin

Ming- Tung Chuang¹, Ta-Chih Hsiao², Guey-Rong Sheu³,
Sheng-Hsiang Wang³, and Neng-Huei Lin³

¹Graduate Institute of Energy Engineering, National Central University, Taiwan

²Graduate Institute of Environmental Engineering, National Central University, Taiwan

³Graduate Institute of Atmospheric Physics, National Central University, Taiwan

November 9th, 2017

D: Aerosol particles at mountain sites

Chair: Drs. Miura & Kita

08:40–09:00 (D-01) Temperate forest as big bioaerosol sources?: Implication from atmospheric Fukushima radio-cesium studies

Y. Igarashi¹, K. Kita², T. Maki³, T. Kinase², N. Hayashi²,
K. Adachi¹, C. Takenaka⁴, M. Kajino¹, M. Ishizuka⁵, T. T. Sekiyama¹,
Y. Zaizen¹, K. Ninomiya⁶, H. Okochi⁷, and A. Sorimachi⁸

¹*Meteorological Research Institute, Japan*

²*College of Science, Ibaraki University, Japan*

³*Graduate School of Natural Science and Technology, Kanazawa University, Japan*

⁴*Graduate School of Bioagricultural Sciences, Nagoya University, Japan*

⁵*Faculty of Engineering, Kagawa University, Japan*

⁶*Graduate School of Science, Osaka University, Japan*

⁷*Research Institute for Science and Engineering, Waseda University, Japan*

⁸*Fukushima Medical University, Japan*

09:00–09:20 (D-02) Bioaerosols sampled in Fukushima mountainous region and contribution to the radio-cesium resuspension

K. Kita¹, N. Hayashi¹, K. Minami¹, M. Mimura¹, Y. Igarashi², K. Adachi², T. Maki³, M.
Ishiduka⁴, H. Okochi⁵, J. Furukawa⁶, K. Ninomiya⁷, and A. Shinohara⁷

¹*College of Sciences, Ibaraki University, Japan*

²*Meteorological Research Laboratory, Japan*

³*College of Science and Engineering, Kanazawa University, Japan*

⁴*Faculty of Engineering, Kagawa University, Japan*

⁵*School of Creative Science and Engineering, Waseda University, Japan*

⁶*Faculty of Life and Environmental Sciences, Tsukuba University, Japan*

⁷*Graduate School of Sciences, Osaka University, Japan*

09:20–09:40 (D-03) Online analysis of water-soluble acidic gases and anions in particulate matter at the summit of Mt. Fuji, Japan

Masaki Takeuchi¹, Naoya Tomiyasu², Makoto Namikawa²,
Hideji Tanaka¹, Kei Toda³, and Hiroshi Okochi⁴

¹*Institute of Biomedical Sciences, Tokushima University Graduate School, Japan*

²*Faculty of Pharmaceutical Sciences, Tokushima University, Japan*

³*Department of Chemistry, Kumamoto University, Japan*

⁴*Department of Resources and Environmental Engineering, Waseda University, Japan*

09:40–10:00 (D-04) Aerosol chemistry in summer at the top of Mt. Fuji

K. Shimada^{1,2}, C. F. Ou-Yang⁴, S. Kato³, N. H. Lin^{1,4},
C. K. Chan⁵, Y. P. Kim^{1,6,7}, and S. Hatakeyama^{1,2}

¹*Global Innovation Research Organization, Tokyo University of Agriculture and Technology, Japan*

²*Institute of Agriculture, Graduate School of Tokyo University of Agriculture and Technology, Japan*

³*Faculty of Urban Environmental Sciences, Tokyo Metropolitan University, Minamiosawa, Japan*

⁴*Department of Atmospheric Sciences, National Central University, Taiwan*

⁵*School of Energy and Environment, City University of Hong Kong, China*

⁶*Department of Chemical Engineering & Materials Science, Ewha Womans University, Republic of Korea*

⁷*Department of Environmental Science & Engineering, Ewha Womans University, Republic of Korea*

Coffee Break (20 min.)

10:20–10:40 (D-05) Properties of new particle formation at the summit of Mt. Fuji, Japan - Measured results during summer from 2006 to 2016 –

Ryota Kataoka¹, Kazuhiko Miura², Masahiro Momoi¹, Yoko Iwamoto³,
Masanori Yabuki⁴, Katsuhiro Nagano⁵, Shungo Kato⁶,
Hiroshi Kobayashi⁷, Hiroshi Hayami⁸, and Hiroshi Okochi⁹

¹*Department of Physics, Graduate School of Science, Tokyo University of Science, Japan*

²*Department of Physics, Faculty of Science Division I, Tokyo University of Science, Japan*

³*Graduate School of Biosphere Science, Hiroshima University, Japan*

⁴*Research Institute for Sustainable Humanosphere, Kyoto University, Japan*

⁵*Department of Liberal Arts, Faculty of Science and Technology, Tokyo University of Science, Japan*

⁶*Faculty of Urban Environmental Sciences, Tokyo Metropolitan University, Japan*

⁷*Faculty of Life and Environmental Sciences, University of Yamanashi, Japan*

⁸*Central Research Institute of Electric Power Industry, Japan*

⁹*Graduate School of Creative Science and Engineering, Waseda University, Japan*

10:40–11:00 (D-06) Statistical connections between new particle formation events and enhanced cloud condensation nuclei at a mountaintop site

Catherine N. Chachere¹, A. Gannet Hallar¹, and Alla Zelenyuk² (To be presented by R.C. Petersen¹)

¹*Department of Atmospheric Sciences, University of Utah, USA*

²*Pacific Northwest National Laboratory, USA*

11:00–11:20 (D-07) Properties of cloud condensation nuclei at the summit of Mt. Fuji, Japan, and their relationship to fog droplets

Ayami Watanabe¹, Yoko Iwamoto^{2,5}, Ryota Kataoka², Kazuhiko Miura²,
Mitsuo Uematsu³ and Hiroshi Kobayashi⁴

¹*Graduate School of Science, Tokyo University of Science, Japan*

²*Faculty of Science Division I, Tokyo University of Science, Japan*

³*Atmosphere and Ocean Research Institute, the University of Tokyo, Japan*

⁴*Graduate school of Interdisciplinary Research, University of Yamanashi, Japan*

⁵*Graduate School of Biosphere Science, Hiroshima University, Japan*

11:20–11:40 (D-08) Cloud condensation nuclei (CCN) activation behavior of black carbon in liquid clouds at the high-altitude site Jungfraujoch, Switzerland (3580m asl)

Ghislain Motos, Joel Corbin, Erik Herrmann, Julia Schmale, Robin Modini, Nicolas Bukowiecki, Urs Baltensperger and Martin Gysel
Laboratory of Atmospheric Chemistry, Paul Scherrer Institute, Switzerland

11:40–12:00 (D-09) Comparison of aerosol chemistry and physics from multiyear wildfire measurements at Whistler Peak

Michael J. Wheeler¹, Anne Marie Macdonald¹, W. Richard Leitch², Lin Huang², Sangeeta Sharma², Andrea Darlington¹, and John Liggio¹
¹*Air Quality Research Division, Environment and Climate Change Canada, Canada*
²*Climate Research Division, Environment and Climate Change Canada, Canada*

Lunch Break (90 min.)

E: Aerosol optical depth and aerosol optical properties

Chair: Drs. Wheeler & McCubbin

13:30–13:50 (E-01) Integrating chemical and optical properties of atmospheric aerosols measured at the remote Montsec site (NE Spain)

Marco Pandolfi¹, Marina Ealo^{1,2}, Anna Ripoll¹, Xavier Querol¹, and Andrés Alastuey¹
¹*Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Spain*
²*Department of Applied Physics, Faculty of Physics, University of Barcelona, Spain*

13:50–14:10 (E-02) Impacts of increasing aridity and wildfires on aerosol loading in the intermountain western U.S.

A.G. Hallar^{1,2}, N. Molotch³, E. Andrews^{4,5}, J.J. Michalsky^{4,5}, R. C. Petersen^{1,2}, B. Livneh⁴, J. Hand⁶, D. Lowenthal², K.E. Kunkel⁷, and I.B. McCubbin²
¹*Department of Atmospheric Science, University of Utah, USA*
²*Storm Peak Laboratory, Desert Research Institute, USA*
³*Department of Geography, University of Colorado, USA*
⁴*Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado, USA*
⁵*NOAA Earth System Research Laboratory, Global Monitoring Division (GMD), USA*
⁶*Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State University, USA*
⁷*Cooperative Institute for Climate and Satellites, North Carolina State University, USA*

14:10–14:30 (E-03) Aerosol optical properties by using sky radiometer at Mt. Jodo/Tateyama, Japan

Kazuma Aoki
Faculty of Science, University of Toyama, Japan

F: Studies relating to mountain atmosphere

Chair: Drs. Wheeler & McCubbin

14:30–14:50 (F-01) Study of atmospheric electricity at the summit of Mt. Fuji

Masashi Kamogawa

Department of Physics, Tokyo Gakugei University, Japan

14:50–15:10 (F-02) Exploring the importance of O₂--catalyzed SO₂ oxidation in the formation of sulfates

Narcisse T. Tsona and Lin Du

Environment Research Institute, Shandong University, China

15:10–15:30 (F-03) Experimental study of turbulent flow inlet system performance

R.C. Petersen^{1,2}, A.G. Hallar^{1,2}, I. Novosselov³, I.B. McCubbin²,

D. Lowenthal⁴, J. Ogren⁵, R. Gorder⁶, and R. Purcell⁴

¹*Department of Atmospheric Science, University of Utah, USA*

²*Storm Peak Laboratory, Desert Research Institute, USA*

³*Department of Mechanical Engineering, University of Washington, USA*

⁴*Desert Research Institute, USA*

⁵*Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado, USA*

⁶*Enertech, Inc., USA*

Coffee Break (10 min.)

(P-01) Global comparisons of seasonal cycles of tropospheric ozone and its precursors observed at mountain sites

Sachiko Okamoto¹, Hiroshi Tanimoto¹, Louisa K. Emmons²,
Silvie Gravel³, Daven K. Henze⁴, Marianne T. Lund⁵,
R. Bradley Pierce⁶, Kengo Sudo⁷ and Michael Schulz⁸

¹National Institute for Environmental Studies, Japan

²National Center for Atmospheric Research, USA

³Environment Canada, Japan

⁴University of Colorado, USA

⁵Center for International Climate and Environmental Research, Norway

⁶National Ocean and Atmospheric Administration, USA

⁷Nagoya University, Japan

⁸Norwegian Meteorological Institute, Norway

(P-02) Observation of acidic gases and aerosols in the upper atmospheric boundary layer and in the free troposphere on Mt. Fuji (2)

Yosuke Miyauchi¹, Hiroshi Okochi¹, Kojiro Shimada¹, Naoya Katsumi²,
Yukiya Minami², Hiroshi Kobayashi³, Kazuhiko Miura⁴, Shungo Kato⁵,
Masaki Takeuchi⁶, Kei Toda⁷, and Shinichi Yonemochi⁸

¹Waseda University, Japan

²Ishikawa Prefectural University, Japan

³University of Yamanashi, Japan

⁴Tokyo University of Science, Japan

⁵Tokyo Metropolitan University, Japan

⁶Tokushima University, Japan

⁷Kumamoto University, Japan

⁸Center for Environmental Science in Saitama, Japan

(P-03) How large is the influence of local pollution sources at the Jungfraujoch, Switzerland? Parallel aerosol measurements at an adjacent mountain ridge

Nicolas Bukowiecki¹, Erik Herrmann¹, Günther Wehrle¹, Ghislain Motos¹,
Martine Collaud Coen², Urs Baltensperger¹ and Martin Gysel¹

¹Laboratory of Atmospheric Chemistry, Paul Scherrer Institute, Switzerland

²MeteoSwiss, Switzerland

(P-04) Long-term changes in free tropospheric fine aerosol particles and snow chemistry at Mt. Tateyama, central Japan

Kazuo Osada¹, Hajime Iida² and Mizuka Kido³

¹Graduate School of Environmental Sciences, Nagoya University, Japan

²Tateyama Caldera SABO Museum, Japan

³Toyama Prefectural Environmental Science Research Center, Japan

(P-05) Observation of gaseous mercury at the top and the foot of Mt. Fuji

Tatsuya Yamaji¹, Hiroshi Okochi¹, Satoshi Ogawa¹, Naoya Katsumi^{1,3}, Kojiro Shimada¹, Hiroshi Kobayashi², Yukiya Minami³, Kazuhiko Miura⁴, Shungo Kato⁵, Shin-ichi Yonemochi⁶, Natsumi Umezawa⁶, Kiyoshi Nojiri⁶, and Kei Toda⁷

¹*Graduate School of Creative Science and Engineering, Waseda University, Japan*

²*Faculty of Engineering, University of Yamanashi, Japan*

³*Faculty of Bioscience and Environmental Science, Ishikawa Prefectural University, Japan*

⁴*Faculty of Science, Tokyo University of Science, Japan*

⁵*Faculty of Urban Environmental Science, Tokyo Metropolitan University, Japan*

⁶*Center for Environmental Science in Saitama (CESS), Japan*

⁷*Department of Chemistry, Kumamoto University, Japan*

(P-06) Winter and summer PM_{2.5} chemical compositions in Jeju island, Korea

Ki-Ho Lee¹, Chul-Goo Hu¹, Young-Ju Kim² and Shinichi Yonemochi³

¹*Department of Environmental Engineering, Jeju national University, Korea*

²*Ilsung Landscaping Ltd., Korea*

³*Center for Environmental Science in Saitama, Japan*

(P-07) Oxidant concentration by the solar term in Minami-Aizu Mountainous resion, Fukushima prefecture, Japan

Akihiko Naemura¹, Kimiko Nakamura¹ and Yoshitaka Fukuoka²

¹*Department of General Studies and Liberal Arts, Toita Women's College, Japan*

²*Emeritus Professor of Hiroshima and Rissho University, Japan*

(P-08) Characteristics of spring outflow aerosol from Southeast Asia observed at Mt. Lulin

Ta-Chih Hsiao¹, Chun-Chiang Kuo², Guey-Rong Sheu², and Neng-Huei Lin²

¹*Graduate Institute of Environmental Engineering, National Central University, Taiwan*

²*Department of Atmospheric Sciences, National Central University, Taiwan*

(P-09) Effects of forest management on CO₂ emission from Satoyama (Village-vicinity Mountain) soil

Eri Sonoda¹, Daisuke Kawamoto¹, Hiroshi Okochi², and Akane Miyazaki¹

¹*Department of Chemical and Biological Sciences, Japan Women's University, Japan*

²*Graduate school of Creative Science and engineering, Waseda University, Japan*

(P-10) Characteristics of volatile organic compounds emitted from livestock sheds in Japan

Nobuyuki Tanaka¹, Nao Osaka² and Akane Miyazaki²

¹*Environmental Science Laboratory, Central Research Institute of Electric Power Industry, Japan*

²*Department of Science, Japan Women's University, Japan*

(P-11) NO_y measurements at the top of Mt. Fuji

Ryuichi Wada¹, Yasuhiro Sadanaga², Shungo Kato³, Naoya Katsumi⁴,
Hiroshi Okochi⁴, Yoko Iwamoto^{5,9}, Kazuhiko, Miura⁵, Hiroshi Kobayashi⁶,
Hitoshi Kamogawa⁷, Jun Matsumoto⁴, and Seiichiro Yonemura⁸

¹*Teikyo University of Science, Japan*

²*Osaka Prefecture University, Japan*

³*Tokyo Metropolitan University, Japan*

⁴*Waseda University, Japan*

⁵*Tokyo University of Science, Japan*

⁶*University of Yamanashi, Japan*

⁷*Tokyo Gakugei University, Japan*

⁸*National Agriculture and Food Research Organization, Japan*

⁹*now at Graduate School of Biosphere Science, Hiroshima University*

(P-12) Observation of columnar aerosol optical properties by Sky-radiometer from 2014 to 2016 at the middle of Mt. Fuji, Japan

Masahiro Momoi¹, Kazuhiko Miura², and Kazuma Aoki³

¹*Department of Physics, Graduate School of Science, Tokyo University of Science, Japan*

²*Department of Physics, Faculty of Science Division 1, Tokyo University of Science, Japan*

³*Department of Earth Sciences, Faculty of Science, University of Toyama, Japan*

(P-13) Correction for light absorption coefficient measured by multiangle absorption photometer at low concentration

Jeonghoon Lee and Hyeok Min Kwon

Korea University of Technology and Education (KOREATECH), South Korea

(P-14) Measurement of particle size distribution of nanoparticles at summit of Mt. Fuji

Shinji Muramoto¹, Indra Chandra¹, Yayoi Inomata¹, Hidenori Higashi¹,
Yoshio Otani¹, Takafumi Seto¹, Kazuhiko Miura², Yoko Iwamoto², and Shungo Kato³

¹*Department of Chemical Engineering, Kanazawa University, Japan*

²*Department of Chemical Physics, Tokyo University of Science, Japan*

³*Department of Physical Chemistry, Tokyo Metropolitan University, Japan*

(P-15) Atmospheric behavior and health risk assessment of polycyclic aromatic hydrocarbons in urban, forest and mountainous site in Japan (2)

Masayuki Nohchi¹, Hiroshi Okochi¹, Kazuki Ono¹, Kojiro Shimada¹, and Naoya Katsumi²

¹*Graduate School of Creative Science and Engineering, Waseda University, Japan*

²*Biosources and Environmental Sciences, Ishikawa Prefectural University, Japan*

(P-16) Forest filter effect for acidic substances and trace metal elements in a small forested hilly mountain in the Tokyo metropolitan area

Reina Nagaoka¹, Hiroshi Okochi¹, Kojiro Shimada¹, and Akane Miyazaki²

¹*Graduate School of Creative Science and Engineering, Waseda University, Japan*

²*Faculty of Science, Japan Women's University, Japan*

(P-17) Chemical constituents in atmospheric aerosols observed at Tateyama mountain area, Japan during 2004 to 2016

Mizuka Kido, Toshiaki Mizoguchi, Hiroaki Hatsushika, and Hiroyuki Shimada
Toyama Prefectural Environmental Science Research Center, Japan

(P-18) Transport efficiency of black carbon aerosol to the lower free troposphere evaluated from simultaneous observation at Suzu and Happo ridge sites

M. Endo¹, K. Kita¹, Y. Namaizawa¹, T. Fujita¹, A. Matsuki²,
Y. Sadanaga³, K. Nakagomi⁴, and Y. Kondo⁵

¹*College of Sciences, Ibaraki University, Japan*

²*Institute of Nature and Environmental Technology, Kanazawa University, Japan*

³*Department of Applied Chemistry, Osaka Prefecture University, Japan*

⁴*Nagano Environmental Conservation Research Institute, Japan*

⁵*National Institute for Polar Research, Japan*

(P-19) Aerosol observation with a polarization optical particle counter at mountain sites

Hiroshi Kobayashi¹, Yoshihiro Oki², Yuji Zaizen³, Yasuhito Igarashi³ and Kazuhiko Miura⁴

¹*Graduate Faculty of Interdisciplinary Research, University of Yamanashi, Japan*

²*Graduate School of Life and Environmental Sciences, University of Yamanashi, Japan*

³*Meteorological Research Institute, Japan*

⁴*Faculty of Science Division I, Tokyo University of Science, Japan*

(P-20) Internal mixing state of wintertime Asian dust (Kosa) with air pollutant arriving at mountainous site in coastal area faced to Japan Sea

Masaru Nishide and Yukiya Minami

Department of Environmental Science, Ishikawa Prefectural University, Japan

(P-21) Investigation of quantitative method for atmospheric humic-like substances and its application to atmospheric aerosols in the free troposphere

Naoya Katsumi^{1,2}, Shuhei Miyake², and Hiroshi Okochi²

¹*Department of Environmental Science, Ishikawa Prefectural University, Japan*

²*Department of Resources and Environmental Engineering, Waseda University, Japan*

(P-22) Simultaneous observation of PM_{2.5} focusing on coal combustion at the highest mountains in Japan and Korea

Shinichi Yonemochi¹, Ki-Ho Lee², Hiroshi Okochi³, Chul-Goo Hu²,

Yuichi Horii¹ and Hitoshi Tanaka¹

¹*Center for Environmental Science in Saitama, Japan*

²*Jeju National University, Korea*

³*Waseda University, Japan*

(P-23) Observational study on wet removal process of black carbon particles in Tokyo and Okinawa

Tatsuhiko Mori^{1,2}, Nobuhiro Moteki², Sho Ohata², Makoto Koike², and Yutaka Kondo³

¹*Department of Physics, Faculty of Science Division I, Tokyo University of Science, Japan*

²*Department of Earth and Planetary Science, Graduate School of Science, The University of Tokyo, Japan*

³*National Institute of Polar Research, Japan*

(P-24) Characteristics of cloud condensation nuclei at the summit of Mt. Fuji (Japan, 3776m a.m.s.l.) during summer season

Konosuke Sato¹, Ryota Kataoka¹, Yoko Iwamoto², Kazuhiko Miura¹,
Mitsuo Uematsu³ and Hiroshi Okochi⁴

¹*Department of Physics, Tokyo University of Science, Japan*

²*Graduate School of Biosphere Science, Hiroshima University, Japan*

³*Atmosphere and Ocean Research Institute, the University of Tokyo, Japan*

⁴*Graduate School of Creative Science and Engineering, Waseda University, Japan*

(P-25) Stream water chemistry in a mountain forest near the Tokyo metropolitan area and the impact of atmospheric deposition (3)

Mamoru Maniwa¹, Hiroshi Okochi¹, Kojiro Shimada¹, Takanori Nakano¹, and Manabu Igawa²

¹*Graduate School of Creative Science and Engineering, Waseda University, Tokyo, Japan*

²*Department of Engineering, Kanagawa University, Kanagawa, Japan*

(P-26) Effect of atmospheric deposition on trace metals in stream water in mountains near the Tokyo metropolitan area (3)

Suzumi Nishimura¹, Hiroshi Okochi¹, Kojiro Shimada¹, Takanori Nakano¹, and Manabu Igawa²

¹*Graduate School of Creative Science and Engineering, Waseda University, Japan*

²*Faculty of Engineering, Kanagawa University, Japan*

(P-27) Chemical characteristics of snow cover at Murododaira, Mt. Tateyama

Koichi Watanabe, Taiki Hirai, Kohei Takatsuji, Keisuke Nakagawa, and Ryosuke Ejiri
Department of Environmental and Civil Engineering, Toyama Prefectural University, Japan

(P-28) Deposition of transboundary transported species by using multi-isotopes at Mt. Happo

Yayoi Inomata¹, Tatsuyoshi Saito², Masayuki Morohasi³,
Naoyuki Yamashita⁴, Kazunori Nakagomi⁵, Hiroyuki Sase³,
Tsuayoshi Ohizumi², and Takanori Nakano⁶

¹*Institute of Nature and Environmental Technology, Kanazawa University, Japan*

²*Niigata Prefectural Institute of Public Health and Environmental Sciences, Japan*

³*Asia Center for Air Pollution Research, Japan*

⁴*Forestry and Forest Products Research Institute, Japan*

⁵*Nagano Environmental Conservation Research Institute, Japan*

⁶*Research Institute for Humanity and Nature, Japan*

(P-29) Characteristics of carbonaceous fractions in PM_{2.5} of Anmyeon Island, a background site in Korea

Jong Sik Lee¹, Yu Woon Jang¹, Eun Sil Kim²,
Yong Pyo Kim³, Chang Hoon Jung⁴, and Ji Yi Lee¹

¹*Department of Environmental Engineering, Chosun University, South Korea*

²*Korea Global Watch Center, Korea Meteorological Administration, South Korea*

³*Department of Chemical Engineering and Materials Science, Ewha Womans University, South Korea*

⁴*Department of Environmental Health, Kyungin Women's College, South Korea*

(P-30) Relationship between black carbon aerosol and carbon monoxide at a high-mountain background station in East Asia

Shantanu Kumar Pani, Chang-Feng Ou-Yang, and Neng-Huei Lin
Department of Atmospheric Sciences, National Central University, Taiwan

(P-31) Comparison of PM_{2.5} and its Polycyclic Aromatic Hydrocarbons between basin and mountain sites in upper northern Thailand during smoke haze period

Duangduean Thepnuan¹, Somporn Chantara^{1,2}, Wittaya Tala¹, Wan Wiriya^{1,2},
Lin-Chi Wang³, Neng-Huei Lin⁴

¹ *Environmental Chemistry Research Laboratory, Department of Chemistry, Faculty of Science, Chiang Mai University, Thailand*

² *Environmental Science Research Center, Faculty of Science, Chiang Mai University, Thailand*

³ *Department of Civil Engineering and Geomatics, Cheng Shiu University, Taiwan*

⁴ *Department of Atmospheric Sciences, National Central University, Taiwan*

(P-32) Effects of open burning and metrological condition on concentrations of fine particulate matters at mountain and foothill sites in northern Thailand in 2015

Nuttiapon Yabueng¹, Duangduean Thepnuan², Wan Wiriya^{1,2}, Somporn Chantara^{1,2}

¹ *Environmental Chemistry Research Laboratory, Department of Chemistry, Faculty of Science, Chiang Mai University, Thailand*

² *Environmental Science Research Center, Faculty of Science, Chiang Mai University, Thailand*

(P-33) Differences between high elevation and sea level trace gas measurements at similar latitudes

Russell Schnell, Steve Montzka, and Ed Dlugokencky
NOAA, Global Monitoring Division, USA

(P-34) Plausible trajectory of FDNPP-origin Cesium-134 infinitesimally detected at the summit of Mt. Fuji

Masashi Kamogawa¹, Hiroshi Okochi², Kazuhiko Miura³, and Yukiko Dokiya⁴

¹ *Department of Physics, Tokyo Gakugei University, Japan*

² *Department of Resources and Environmental Engineering, Waseda University, Japan*

³ *Department of Physics, Faculty of Science Division 1, Tokyo University of Science, Japan*

⁴ *NPO Mount Fuji Research Station, Japan*

18:00 – 20:00 Banquet

November 10th, 2017

G: Chemistry of fog/cloud, rain, and dew at mountain sites

Chair: Drs. Okochi & Kaneyasu

08:40–09:00 (G-01) Deposition mechanisms of ¹³⁷Cs at mountainous regions in Japan

Naoki Kaneyasu¹, Naoyuki Sanada², Genki Katata³, Chika Nakanishi², and Yoshimi Urabe⁴

¹*National Institute of Advanced Industrial Science and Technology, Japan*

²*Fukushima Environmental Safety Center, Japan Atomic Energy Agency, Japan*

³*Institute for Global Change Adaptation Science, Ibaraki University, Japan*

⁴*NESI, Inc., Japan*

09:00–09:20 (G-02) Multiphase chemistry modelling using the regional model COSMO-MUSCAT: Results for the field campaign HCCT-2010

Ralf Wolke¹, Roland Schrödner², Andreas Tilgner¹,

Dominik van Pinxteren¹, and Hartmut Herrmann¹

¹*Leibniz-Institute for Tropospheric Research, Germany*

²*Lund University, Centre for Environmental and Climate Research, Sweden*

09:20–09:40 (G-03) SPACCIM modelling of the multiphase chemical aerosol processing in orographic clouds at Mt. Schmücke

A. Tilgner¹, E. H. Hoffmann¹, R. Wolke², and H. Herrmann¹

¹*Atmospheric Chemistry Department, Leibniz Institute for Tropospheric Research, Germany*

²*Modelling Atmospheric Processes Department, Leibniz Institute for Tropospheric Research, Germany*

09:40–10:00 (G-04) Observation of orographic clouds in alpine terrain with a holographic imager (HOLIMO)

Jan Henneberger, Alexander Beck, Fabiola Ramelli and Ulrike Lohmann

Institute for Atmospheric and Climate Science, ETH Zurich, Switzerland

Coffee Break (20 min.)

10:20–10:40 (G-05) Fog characteristics and air pollutants deposition on Mt. Oyama, Japan

Manabu Igawa¹, Kiyoshi Sakurai¹, and Hiroshi Okochi²

¹*Department of Materials and Life Chemistry, Kanagawa University, Japan*

²*Graduate School of Creative Science and Engineering, Waseda University, Japan*

10:40–11:00 (G-06) Observation of cloud water chemistry in the free troposphere and the atmospheric boundary layer on Mt. Fuji (4)

Megumi Nakamura¹, Hiroshi Okochi¹, Kojiro Shimada¹, Naoya Katsumi²,
Yukiya Minami², Hiroshi Kobayashi³, Kazuhiko Miura⁴ and Shungo Kato⁵

¹*Graduate School of Creative Science and Engineering, Waseda University, Japan*

²*Faculty of Biosources and Environmental Sciences, Ishikawa Prefectural University, Japan*

³*Department of Environmental Sciences, University of Yamanashi, Japan*

⁴*Faculty of Science Division 1, Tokyo University of Science, Japan*

⁵*Faculty of Urban Environmental Sciences, Tokyo Metropolitan University, Japan*

11:00–11:20 (G-07) Dicarbonyl compounds in hygroscopic aerosols and cloud waters sampled at the top of Mt. Fuji

Kei Toda¹, Masakazu Iwasaki¹, Kasumi Mitsuishi¹,
Shin-Ichi Ohira¹, Masaki Takeuchi², and Hiroshi Okochi³

¹*Department of Chemistry, Kumamoto University, Japan*

²*Faculty of Pharmaceutical Sciences, Tokushima University, Japan*

³*Department of Resources and Environmental Engineering, Waseda University, Japan*

11:20–11:40 (G-08) The estimation of cloud-fog water collection at different mountain sites in Taiwan

Hsiu-Chen Chiang¹, Po-Hsiung Lin¹, and Stefan Simon²

¹*Department of Atmospheric Sciences, National Taiwan University, Taiwan*

²*Research Centre for Environmental Changes, Academia Sinica, Taiwan*

11:40–12:00 (G-09) Precipitation chemical composition trends at Croatian mountain sites (1981-2016)

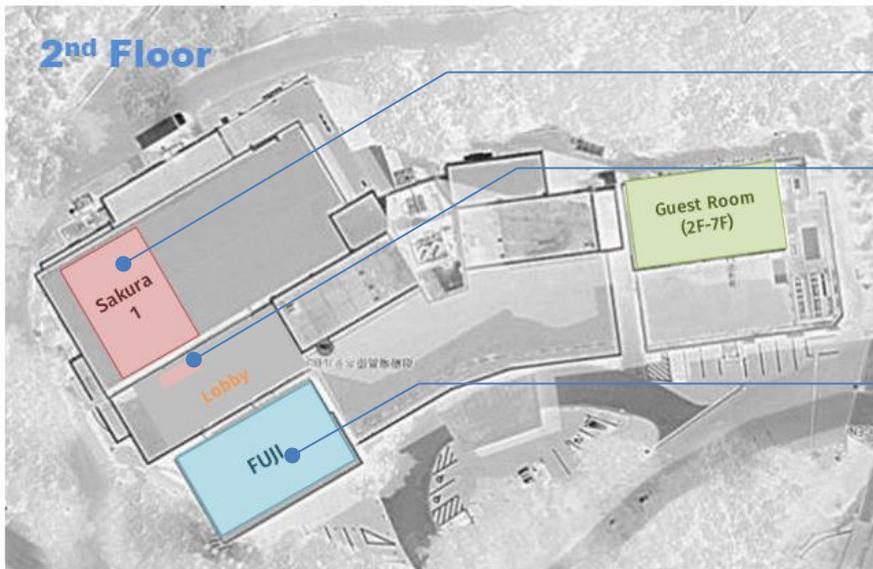
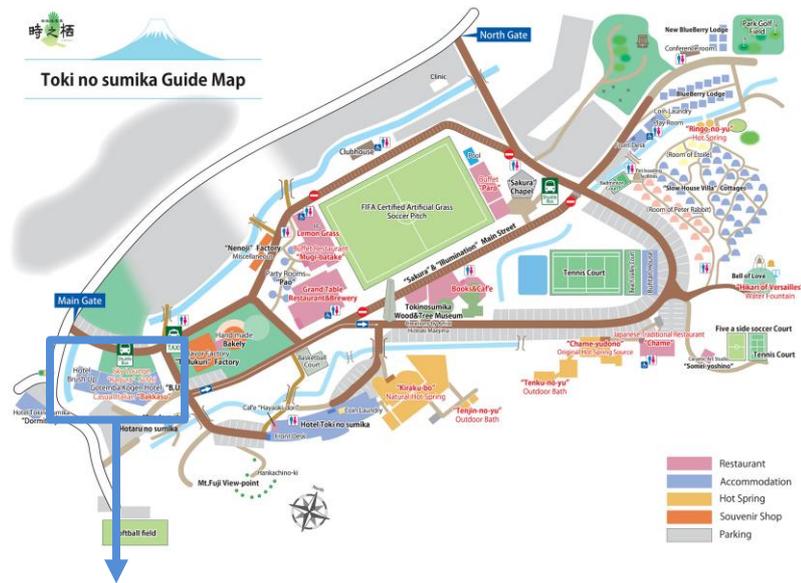
Sonja Vidič, Vedrana Džaja Grgičin, Ivona Igrac,
Ksenija Kuna and Cleo Kosanović

Meteorological and Hydrological Service, Zagreb, Croatia

Closing Remarks

12:00–12:30

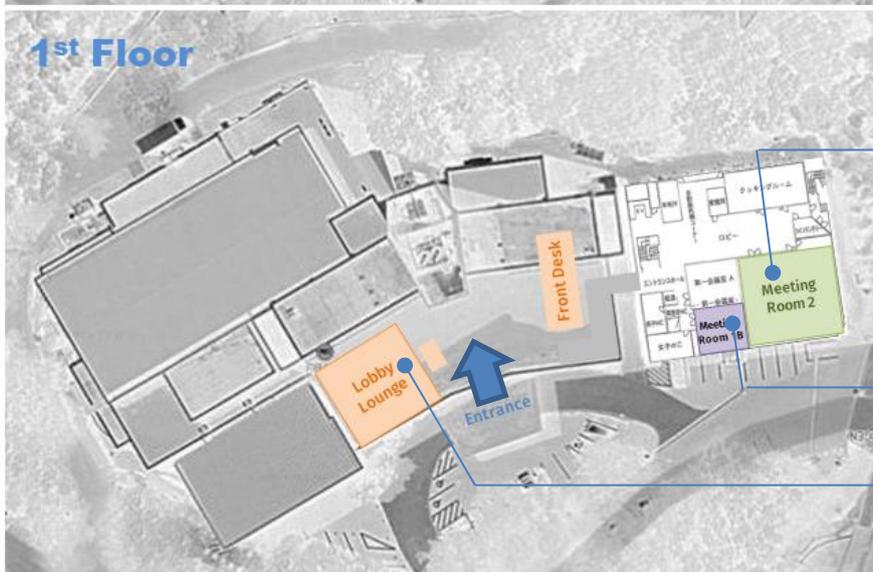
Venue Floor Plan



Banquet Hall "SAKURA"
Oral Session (11/8-10)

Lobby
Registration Desk (11/8-10)

Banquet Hall "FUJI"
Banquet (11/9)



Meeting Room 2
Poster Session (11/8-9)
Exhibition (11/8-9)

Meeting Room 1B
Secretariat

Lobby/ Lounge
Registration Desk (11/6-7)
Ice Breaker (11/6)

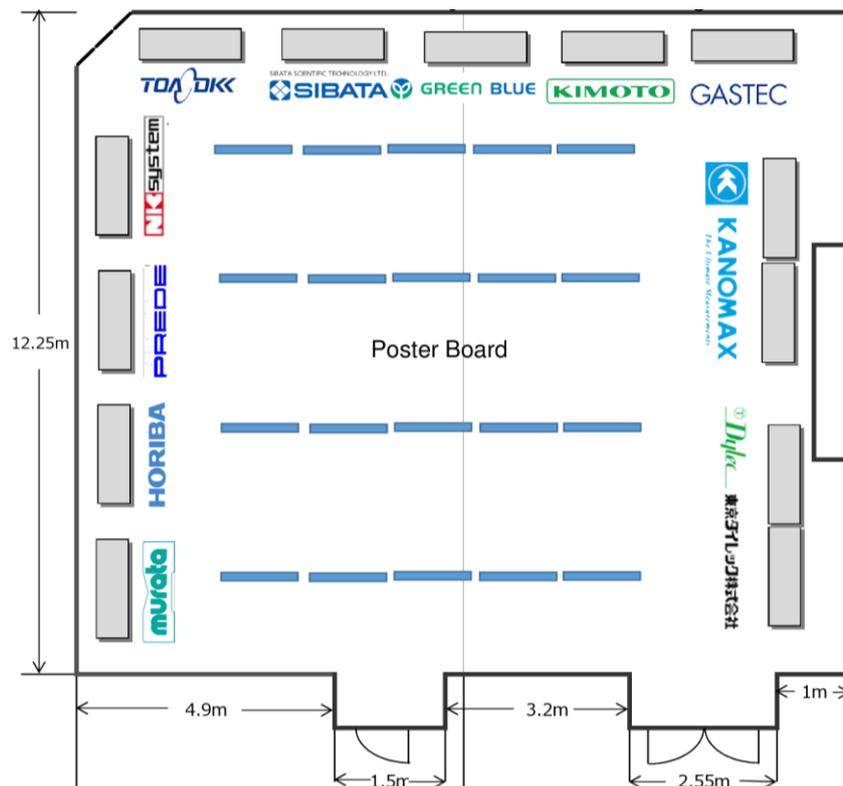
Sponsors



Sponsor's exhibition

Exhibition Opening: Nov. 8 - Nov. 9 9:00 am - 6:00 pm

Venue: Meeting Room 2



Financial Supporters

公益財団法人
鹿島学術振興財団
THE KAJIMA FOUNDATION

 **Watanabe memorial foundation**
For the advancement of New technology

Under the auspices of

Shizuoka Prefectural Government

Yamanashi Prefectural Government

Japan Society for Atmospheric Environment

The Meteorological Society of Japan

Society of Atmospheric Electricity of Japan

Japan Association of Aerosol Science and Technology

The Japan Society of Atmospheric Chemistry

Japan Society for Environmental Chemistry