

# 18-Apr Main Hall A/ Plenary Session and Breakout Session I (Hybrid)

9:00

## Opening ceremony

(MC: Hiroyuki Sase)

Opening remarks by SSC: Nobuhito Ohte

Welcome remarks by OC: Shiro Hatakeyama

Welcome remarks by ISAB: Doug Burns

Introduction of co-organizers, supporters, and sponsors

9:20

## **Keynote Speech 1: Chaired by Nobuhito Ohte**

KN-1 Charles T. Driscoll

Recovery of terrestrial and aquatic ecosystems in the U.S. from declining acidic deposition

10:10 - 10:40

Coffee Break (Main Hall B)

10:40

Poster flash talks

12:00 - 13:30

Lunch (Hotel Nikko)

## S6A: Long-term trends of deposition, soil and water recovery

**Chaired by Keisuke Koba, Sergey A. Gromov (online)**

13:30

S6A-1 Greg M Beachley

Long-term trends in U.S. deposition monitoring and fused total, dry, and wet deposition estimates with the Total Deposition measurement model fusion method (TDep MMF)

Online

13:50

S6A-2 Yoshiyuki Inagaki

The role of climate and acidic deposition on inter-annual variation of stream water chemistry in forested watersheds at the Shimanto River Basin, southern Japan

Online

14:10

S6A-3 Olga Grigorjevna Netsvetaeva

The role of acid deposition in changing the chemical composition of river waters in the Southern Baikal Region (Eastern Siberia)

Online

14:30

S6A-4 Soyoka Makino

Changes in Spatial Distribution of Stream Nitrate Concentrations throughout Japan over 20 Years: A Resurvey using Citizen Science

14:50

S6A-5 Sergey A. Gromov

Empirical evaluation of acidifying compound discharge from small watersheds in different areas of EANET inland aquatic monitoring in Russia

Online

15:10

S6A-6 Dongwei Lv

Heavy metals and major ions in small pristine watersheds of Upper Qinghai Lake, northwest China

15:30 - 16:00

Coffee Break

## S4A: Wet, Dry, and Occult Deposition

**Chaired by Tsuyoshi Ohizumi, Mingqun Huo**

16:00

S4A-1 Yingying Wang

Substantial decreases in nitrogen and sulfur deposition into a temperate forest in Northeastern China from 2014 to 2021

16:20

S4A-2 Snehal Surendra Pujari

Trends analysis of wet deposition in Southeast Asia

16:40

S4A-3 James Jay Schauer

Measurement of Refractory Black Carbon Wet Deposition in the United States National Atmospheric Deposition Network - NADP

17:00

S4A-4 David Gay

Collection and Determination of Total & Organic Nitrogen and Total Phosphorus in Precipitation using a Modified NADP-NTN Wet-Deposition Collector

17:20

S4A-5 Umesh Chandra Kulshrestha

Estimation of nss-Cl- and nss-SO4-2 in rain water at four sites of different characteristics in Haryana state of India

Online

17:40

S4A-6 Arne Verstraeten

Long-term trends in throughfall and total deposition of anthropogenic nitrogen and sulphur compounds in European forests

Online

18:00

Close

13:30

13:50

14:10

14:30

14:50

15:10

15:30 - 16::00 Coffee Break (Main Hall B)

**S6B: Long-term trends of deposition, soil and water recovery**

**Chaired by Mitsuhsisa Baba, Jakub Hruška**

16:00

16:20

16:40

17:00

17:20

17:40

18:00

S6B-1	Michael R. McHale	Trends in Precipitation Chemistry across the U.S. 1985-2017: Quantifying the benefits from 30 years of Clean Air Act Amendment regulation
S6B-2	Nay Lin Maung	Impact of forest fire on rainwater chemistry in Palangka Raya City, Central Kalimantan, Indonesia
S6B-3	Jakub Hruška	Forest growth responds more to air pollution than soil acidification
S6B-4	Catherine Hilgers	Sulphur dynamics in forest ecosystems following the reduction of sulphur deposition
S6B-5	Hiroyuki Sase	Reactions of forested catchments to changing sulfur deposition in different climatic zones in East Asia
S6B-6	Danni Xie	Delayed recovery of surface water chemistry from acidification in subtropical forest region of China

Close

**S1A: Emissions and their Evaluation by Monitoring and Modeling**

Chaired by Junichi Kurokawa, Hiroshi Tanimoto

13:30	S1A-1	Junichi Kurokawa	Updates of Regional Emission inventory in ASia (REAS): Trends of SLCFs emissions in Asia over the past seven decades
13:50	S1A-2	Yugo Kanaya	Long-term black carbon observations on Fukue Island, Japan revealed rapid emission reduction from China and dominance of residential sector
14:10	S1A-3	Keiichi Sato	Characteristics of organic components and source apportionment of fine particulate matter in Niigata, Japan
14:30	S1A-4	Hiroshi Tanimoto	Challenges for the GOSAT-GW satellite mission to better quantify anthropogenic emissions of greenhouse gases and air pollutants for climate policy
14:50	S1A-5	Kuo-En Chang	A novel high-spatiotemporal satellite AOD map using CNN-based spatial imputation
15:10	S1A-6	Ionut Silviu Pascu	Spatially continuous NO2 concentrations mapping by means of a multi-variate data interpolation using thin plate smoothing splines

15:30 - 16::00 Coffee Break (Main Hall B)

**S1B: Atmospheric chemical and physical processes**

Chaired by Mizuo Kajino, Yusuke Kiriya

16:00	S1B-1	Haotian Zheng	Rapid hydrolysis of NO2 at high ionic strengths of deliquesced aerosol particles
16:20	S1B-2	Jutapas Saiohai	Statistical PM2.5 Prediction using Vertical Meteorological Factors
16:40	S1B-3	Worradom Phairuang	Diurnal variation of atmospheric nanoparticles (PM0.1)-bound carbon compositions in Chiang Mai, Thailand
17:00	S1B-4	Worradom Phairuang	Present status and characteristics of PM0.1 in Upper Southeast Asian Countries
17:20	S1B-5	Jui-Hung Yen	An unexpected role of the aeration tank in the dissemination of airborne antibiotic resistance gene
17:40	S1B-6	Kuan-Chieh LEE	VOCs characteristics, sources, and contribution to SOA formation in Central Taiwan during visibility degradation

18:00 Close

## 19-Apr Main Hall A/ Plenary Session and Breakout Session I (Hybrid)

	<b>Keynote Speech-2: Chaired by Yun Fat Lam</b>			
<u>9:00</u>	KN-2	Joshua S. Fu	Improving Global Estimates of Atmospheric Deposition through Model-Measurement Fusion Approaches	
	<b>Keynote Speech-3: Chaired by Hiroyuki Sase</b>			
<u>9:45</u>	KN-3	Lingli Liu	Anthropogenic aerosol alters plant photosynthesis, transpiration and growth	
<u>10:30</u>	<b>Coffee Break (Main Hall B)</b>			
	~ Poster presentations (Main Hall B)			
	Core time: Odd-numbered posters			
12:00 - 13:30	Lunch (Hotel Nikko)			
	<b><u>S5B: Effects of Atmospheric Deposition and Multiple Pollutants on Terrestrial Ecosystems</u></b>			
	<b>Chaired by Atsushi Kume, Marco Ferretti</b>			
<u>13:30</u>	S5B-1	Hiroyuki Tobita	Growth and photosynthetic responses of cuttings of a Japanese cedar, <i>Cryptomeria japonica</i> , to elevated O <sub>3</sub> exposure	Online
13:50	S5B-2	Enzai Du	Effects of Nitrogen Deposition on Global Forest Ecosystems	Online
14:10	S5B-3	Masahiro Yamaguchi	Effect of O <sub>3</sub> on net photosynthetic rate in the leaves of <i>Fagus crenata</i> seedlings grown under elevated CO <sub>2</sub> and soil nitrogen supply	
14:30	S5B-4	Xiaoni Xu	Long-term enhanced nitrogen deposition on ecosystem carbon dynamics in an oldgrowth subtropical forest, East China	
14:50	S5B-5	Yunting Fang	Retention of deposited ammonium and nitrate and its impact on the global forest carbon sinks	
15:10	S5B-6	Marco Ferretti	The ecological impact of atmospheric deposition on European forests in the time of climate change	
15:30 - 16:00	Coffee Break (Main Hall B)			
	<b><u>S3B: Air pollution and climate change by multiple pollutants</u></b>			
	<b>Chaired by Shungo Kato, Keiichi Sato</b>			
<u>16:00</u>	S3B-1	Yunzhi Xu	Hydroxymethanesulfonate (HMS) Reveals Secondary Characteristics in the 2021 Beijing Sandstorms and Haze Days	Online
16:20	S3B-2	Narisara Siriwattananonkul	Water-soluble organic carbon (WSOC) in PM <sub>2.5</sub> : The influence of solvent and thermal protocols on determination of WSOC	
16:40	S3B-3	Yun Fat LAM	Surface ozone booming with TC-Heat driven biogenic VOCs' amplifications	
17:00	S3B-5	Suteekan Maneejantra	Effecting of Light Intensity on BVOC Emission from <i>Peltophorum pterocarpum</i> in day and nighttime	
17:20	S2B-5	Ravindra Babu Saginela	Transport pathways of carbon monoxide from Indonesian fire pollution to a subtropical high-altitude mountain site in western North Pacific	Online
17:40	S4C-5	Xuejun Liu	Trends of Atmospheric Nitrogen Deposition in China from 2011 to 2020	Online
<u>18:00</u>	Close			

## 19-Apr 201A/ Breakout Session II

<b><u>S2A: Long-range Transport and Modeling</u></b> <b>Chaired by Hiroshi Hayami, Fan Meng</b>		
13:30	S2A-1	Fan Meng      An Integrated Source Apportionment Modeling Methodology and Its Application in 2+26 Cities of Beijing-Tianjin-Hebei of China
13:50	S2A-2	Alessandra De Marco      Biomass losses calculated at large hemispheric scale using different approaches
14:10	S2A-3	Steven Soon-Kai Kong      Evaluation of CMAQ Model for the Strong Dust Episode during the 7-SEAS/2010 Dongsha experiment
14:30	S2A-4	Meigen Zhang      Numerical simulation of interannual variation in transboundary contributions from Chinese emissions to PM2.5 mass burden in South Korea
14:50		
15:10		
15:30 - 16:00	Coffee Break (Main Hall B)	
<b><u>S2B: Long-range Transport and Modeling</u></b> <b>Chaired by Fan Meng, Hiroshi Hayami</b>		
16:00	S2B-1	Kim-Oanh Pham      Long-range transport in rural and urban areas on the western side of Japan
16:20	S2B-2	Chang-Feng Ou-Yang      An integrated study of characterizing vertical homogeneity of air pollutants in northern Taiwan during winter monsoon
16:40	S2B-3	Tanawan Rattanapotanan      Influence of long-range transport on the vertical distribution of PM2.5 in Bangkok
17:00	S2B-4	Jitlada Phupijit      Long-range transport pathways and source identification of fine particles in Bangkok, Thailand
17:20	S2B-6	Kojiro Shimada      Characteristics of haze transported to Malaysia from Indonesia in La Nina episode
17:40	S2B-5	<i>Move to the hybrid session</i>

18:00      Close

19-Apr 201 B/ Breakout Session III

<b>S3A: Urban and regional air pollution by multiple pollutants in Asia</b>			
<b>Chaired by Neng-Huei (George) Lin, Kojiro Shimada</b>			
<u>13:30</u>	S3A-1	Jun-Fa Yeh	Seasonal Impacts of Aerosol Acidity on Secondary Aerosols Formation and Visibility in Taichung, Taiwan
13:50	S3A-2	Li-Ti Chou	Impact of atmospheric process and aerosol pH on the oxidative potential of submicron particles in Taiwan urban area
14:10	S3A-3	Shungo Kato	Long-term measurements of trace gases at the summit of Mt. Fuji during summer
14:30			
14:50	S3A-5	Nitchakarn Changplaiy	Volatile organic compounds (VOCs) and secondary organic aerosol potential (SOAP) during summer season in Bangkok, Thailand
15:10	S3A-6	Hiroo Hata	Impact of net-zero carbon reduction strategy to the concentration of tropospheric ozone and fine particulate matter in Japan, 2050, evaluated by the regional-chemical transport model
15:30 - 16:00	Coffee Break (Main Hall B)		
<b>S4C: Wet, Dry, and Occult Deposition</b>			
<b>Chaired by Koichi Watanabe, Mingqun Huo</b>			
<u>16:00</u>	S4C-1	Guey-Rong Sheu	Eight-year atmospheric mercury deposition to a tropical high mountain background site downwind of the East Asian continent
16:20	S4C-2	Mingqun Huo	Long-term trend of particulate carbonaceous components' concentrations in precipitation and scavenging ratios in East Asia
16:40	S4C-3	David Gay	Per- and Polyfluoroalkyl Substances (PFAS): Concentrations and Deposition in Precipitation
17:00	S4C-6	Douglas A Burns	Atmospheric Nitrogen Deposition in the Chesapeake Bay Watershed: A History of Change
17:20	S4C-5	<i>Move to the hybrid session</i>	
17:40			

18:00 Close

## 20-Apr Main Hall A/ Plenary Session and Breakout Session I (Hybrid)

	<b>Keynote Speech-4: Chaired by Yasutomo Hoshika</b>			
<u>9:00</u>	KN-4	Madhoolika Agrawal	Tropospheric ozone variability and its effects on vegetation and crop plants in the Indo Gangetic Plain region of India	
	<b>Keynote Speech-5: Chaired by Kazuhide Matsuda</b>			
<u>9:45</u>	KN-5	Kentaro Hayashi	Atmosphere-land interaction aspects of the nitrogen issue	
<u>10:30</u>	<b>Coffee Break (Main Hall B)</b> ~ <b>Poster presentations (Main Hall B)</b> Core time: Even-numbered posters			
12:00 - 13:30	Lunch (Hotel Nikko)			
	<b><u>S7C: Atmospheric deposition and biogeochemical cycling</u></b> <b>Chaired by Genki Katata, Xuejun Liu (online)</b>			
<u>13:30</u>	S7C-1	Dongxing Yang	Response of needle stoichiometry to cessation of 10-year N addition in a subtropical Masson pine plantation	
13:50	S7C-2	Atsushi Kume	Dynamics of nitric oxide derived from automobile exhaust gas and ecophysiological properties of roadside trees	
14:10	S7C-3	Hirohiko Nagano	Moderately elevated nitrogen deposition altering soil carbon dynamics	
14:30	S7C-4	Stefan Leca	Climate impact on the forest ecosystem health status in Romania	
14:50	S7C-5	Nan Xia	Significant plant and soil nitrogen coupling across urban forests in eastern China	Online
15:10	S7C-6	Umesh Chandra Kulshrestha	Reactive Nitrogen Deposition in South Asia: Gaps and Recommendations	Online
15:30 - 16:00	Coffee Break (Main Hall B)			
	<b><u>S8: Effects of Air Pollutants on Climate Change</u></b> <b>Chaired by Yugo Kanaya, Junichi Kurokawa</b>			
<u>16:00</u>	S8-1	Tomoki Hirayama	Cobenefit Reduction Potentials of Short-Lived Climate Forcers with Taking Earlier and Drastic Actions ?Case Study for China and India?	Online
16:20	S8-2	Yurie Goto	Estimation of the Co-benefits of Installing Innovative Decarbonizing Technologies on Reduction of Air pollutants and Short-Lived Climate Forcers -Case Study for Thailand and Indonesia-	Online
16:40	S8-3	Takaharu Ota	Analysis on Cobenefit Effects of Carbon Neutrality of Vietnam's National Climate Change Strategies on Air pollutants and Short-Lived Climate Forcers	Online
17:00				
17:20	S8-5	Titinan Utavong	Effects of aging time and relative humidity on the morphology of fine particulate matter from the combustion of rice straw and sugarcane leaves	
17:40	S8-6	Yossakorn Fungkeit	Eddy Covariance CO2 Flux Measurements in Tropical Urban Forest Ecosystem of Kasetsart University, Bangkok	
<u>18:00</u>	<b>Close</b>			
<u>18:30</u>	<b>Banquet (Hotel Nikko)</b>			



**S5A: Effects of Atmospheric Deposition and Multiple Pollutants on Terrestrial Ecosystems**

Chaired by Makoto Watanabe, Zhaozhong Feng

13:30	S5A-1	Makoto Watanabe	Differences of stomatal ozone uptake traits in leaves of seedlings and mature trees of <i>Zelkova serrata</i>
13:50	S5A-2	Yasutomo Hoshika	Development of stomatal conductance modelling in Mediterranean forest trees grown under elevated ozone
14:10	S5A-3	Jacopo Manzini	FlorTree: an innovative model for optimal tree selection to improve air pollution removal capacity in urban ecosystems
14:30	S5A-4	Robert Popek	Phytoremediation of particulate matter, trace elements and microplastic from air by different types of urban greenery
14:50	S5A-5	Ryoji Tanaka	Estimation of stomatal ozone uptake of <i>Q. serrata</i> and <i>C. japonica</i> forests based on the sap flow measurements
15:10	S5A-6	Zhaozhong Feng	Elevated ozone decreased grain yield of winter wheat by accelerating leaf senescence in a warming world

15:30 - 16:00 Coffee Break (Main Hall B)

**S7A: Atmospheric deposition and biogeochemical cycling**

Chaired by Kentaro Hayashi, Yunting Fang

16:00	S7A-1	Ronghua Kang	Forest Canopy Acts as an Atmospheric NO <sub>x</sub> Sink: results from micrometeorological flux measurements
16:20	S7A-2	Masanori Katsuyama	Why do the stream nitrate concentrations differ between neighboring catchments? -Consideration of denitrification processes-
16:40	S7A-3	Nobuhito Ohte	Long-term and catchment-level effects in nitrogen dynamics of the pine wilt disease
17:00	S7A-4	Masami Kanao Koshikawa	Contribution of volcanic ash to Ca and Sr in stream waters in chert and granite watersheds in Japan.
17:20	S7A-5	Kamonnawin Inthanuchit	Characterization of natural organic matter in soil under acid rain leaching in Songkhla Lake Basin, Thailand
17:40	S7A-6	Yansen Xu	Elevated ozone decreased leaf photosynthesis of winter wheat by accelerating leaf senescence in a warming world

18:00 Close





**S3C: Observation and assessment studies of multiple pollutants**

Chaired by Yun Fat Lam, Keiichi Sato

13:30	S3C-1	Pierre Sicard	Trends in urban air pollution over the last two decades: A global perspective
13:50	S3C-2	Man Hei Jeffrey Chang	Modelling 3-dimensional NOx exposure inside the urban street canyon with CFD and GIS data mining
14:10	S3C-3	Yosuke Sakamoto	Evaluation of suppression effect on ozone formation due to peroxy radical uptake by aerosols based on HOx reactivity measurement
14:30	S3C-4	Chih Yu Chan	Source-oriented Impacts of Aerosol Hygroscopicity on Atmospheric Visibility
14:50	S3C-5	Yuji Fujitani	Assessing oxidative stress induction ability and oxidative potential of PM2.5 in cities in eastern and western Japan
15:10			

15:30 - 16:00 Coffee Break (Main Hall B)

**S4B: Wet, Dry, and Occult Deposition**

Chaired by Leiming Zhang, Atsuyuki Sorimachi

16:00	S4B-1	Mizuo Kajino	Uncertainty in simulated dry, wet, and occult deposition of aerosols induced by uncertainty in meteorological simulations and aerosol property assumptions
16:20	S4B-2	Mao Xu	Evaluation and improvement of ammonia bi-directional exchange model based on vertical profile measurements in a deciduous forest in Japan
16:40	S4B-3	Kazuhide Matsuda	Deposition velocity of fine aerosols above a forest in suburban Tokyo based on flux measurements
17:00	S4B-4	Leiming Zhang	A summary of recent findings on atmospheric deposition studies in Canada
17:20	S4B-5	Amanda S Cole	The Measurement-Model Fusion for Global Total Atmospheric Deposition Initiative of the World Meteorological Organization
17:40	S4B-6	Ranjit Kumar	Chemistry of wet deposition in north central India, prediction of acid rain and quantification of annual input through wet and dry deposition for acidifying components

18:00 Close

## 21-Apr Main Hall A/ Plenary Session and Breakout Session I (Hybrid)

### **Keynote Speech-6: Chaired by Tatsuya Hanaoka**

<u>9:00</u>	KN-6	Shuxiao Wang	Development and Applications of Air Benefit, Cost and Attainment Assessment System	<b>Online</b>
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9:45 **Coffee Break (Main Hall B)**

### **S9A Critical load mapping and health effects index**

**Chaired by Naoyuki Yamashita and Lei Duan**

<u>10:00</u>	S9A-1	Hazel Cathcart	Mapping critical loads of acidity across Canada: a high-resolution national estimation of soil critical loads and exceedances	<b>Online</b>
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10:20	S9A-2	Naoyuki Yamashita	Mapping critical loads and exceedances in the Southeast Asian tropics
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10:40	S9A-3	Thomas Scheuschner	Mapping Critical Load for Eutrophication and Acidification for Europe and the results of calculating the CL exceedances.
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11:00	S9A-4	Po-Kai Chang	Spatial distribution of lung deposited surface area in an urban microenvironment based on field measurement and computational fluid dynamics simulation
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11:20	S9A-5	Wenche Aas	Trends in air pollution in Europe, 2000-2019	<b>Online</b>
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11:40

### **Closing ceremony**

(MC: Hiroyuki Sase)

Special issue information: Keiichi Sato

Special issue information: Atsushi Kume

Closing remarks by SSC: Nobuhito Ohte

13:00 Venue close

12:30 **Lunch (Hotel Nikko)**

## 21-Apr 201A/ Breakout Session II

<b><u>S7B: Atmospheric deposition and biogeochemical cycling</u></b>			
<b>Chaired by Urumu Tsunogai, Kazumichi Fujii</b>			
<b>10:00</b>	S7B-1	Linlin Song	Nitrogen isotopic signatures of atmospheric ammonia and source apportionment of atmospheric reduced nitrogen deposition - case of Shenyang, China
10:20	S7B-2	Keisuke Koba	Nitrogen dynamics elucidated by nitrate isotopes in a small, forested catchment in Japan.
10:40	S7B-3	Urumu Tsunogai	Determination on the $\delta^{17}O$ -excess of tropospheric nitric oxide and nitrogen dioxide
11:00	S7B-4	Yoriko Yokoo	Elemental and Sr-Nd-Pb isotopic compositions of monthly rainwater in the Kyoto-Osaka-Kobe area: implication for the provenance of atmospheric deposition
11:20	S7B-5	Yasuhiro Hirano	Fine roots of Japanese plantation trees are sensitive to soil acid buffering capacity
11:40	S7B-6	Kazumichi Fujii	Geology and pedogenesis determine soil vulnerability to acidification
12:00	Venue close		

## 21-Apr 201 B/ Breakout Session III

<b>S9B Atmospheric environment management with science and policy</b>			
<b>Chaired by Ken Yamashita, Tatsuya Hanaoka</b>			
<u>10:00</u>	S9B-1	Ken Yamashita	Scope expansion and perspective of activities of EANET
10:20	S9B-2	Shaohui Zhang	Integrated solutions for climate change mitigation and pollution abatement in Asia
10:40	S9B-3	Runsen Zhang	The impacts of low-carbon policy measures on regional air pollutant emission reductions in the transport sector: an analysis of co-benefit effects of achieving China's carbon neutrality target
11:00	S9B-4	Saritha Sudhamma Vishwanathan	The effects of decarbonization measures in reducing air pollutants: Iron and Steel industry in major Asian countries
11:20	S9B-5	Tatsuya Hanaoka	Cobenefits and Tradeoffs of Deep-Decarbonization in Asia ? Potential and Feasibility of Mitigating Short-Lived Climate Forcers and Air Pollutants
11:40	S9B-6	Hajime Akimoto	30 years of development of science and policy related to acid deposition in East Asia
12:00	Venue close		