

# 6<sup>th</sup> International SKYNET Workshop 2021

## Japan (online)

November 9-11, 2021

### ■Day 1, November 9 (Tue)

UTC (JST)

9:00 (18:00) **Welcome & Logi:** [Hitoshi Irie](#) (Chiba Univ.)

#### Project aspect [Chair: [P. Khatri](#)]

9:10 (18:10) **On the issues and prospects of the SKYNET project**

[\\*Teruyuki Nakajima and the International SKYNET committee](#)

9:25 (18:25) **Current status and progress on International SKYNET Data Center (ISDC)**

[\\*Tomoaki Nishizawa and Akiko Higurashi](#)

9:40 (18:40) **Models, In situ, and Remote sensing of Aerosols (MIRA): Formation of an International Working Group**

[\\*Greg Schuster and Chip Trepte](#)

9:55 (18:55) **Metrology of Aerosol optical properties; the MAPP project**

[\\*Stelios Kazadzis, Natalia Kouremeti, Saulius Nevas, and Julian Grobner](#)

10:10 (19:10) **Development of international air quality and sky research remote sensing (A-SKY) network**

[\\*Hitoshi Irie, Alessandro Damiani, Toshihiko Takemura, Thanawat Jarupongsakul, Manish Naja, and Sang-Woo Kim](#)

10:25 (19:25)

(Break)

#### COVID-19 [Chair: [J. Bi](#)]

10:40 (19:40) **Use of sun-photometry to investigate the COVID-19 lockdown effects on the atmospheric composition in various Italian urban sites**

[\\*Monica Campanelli, A.M. Iannarelli, G. Mevi, S. Casadio, H. Diémoz, S. Finardi, A. Dinoi, E. Castelli, A. di Sarra, A. Di Bernardino, G. Casasanta, C. Bassani, A.M. Siani, M. Cacciani, F. Barnaba, L. Di Liberto, and S. Argentini](#)

10:55 (19:55) **Peculiar COVID-19 effects in the Greater Tokyo Area revealed by the variability in tropospheric gases and light- absorbing aerosols**

[\\*Alessandro Damiani, Hitoshi Irie, Dmitry Belikov, Tamio Takamura, Syedul H. M. Hoque, and Raul R. Cordero](#)

11:10 (20:10)

Group photo

11:15 (20:15)

(Break)

11:25 (20:25)

To

Social gathering @ Zoom

12:55 (21:55)

## ■Day 2, November 10 (Wed)

### Algorithm & QA/QC [Chair: Z. Wang]

UTC (JST)

- 9:00 (18:00) **Development of Skyrad pack MRI version 2**  
\*Rei Kudo, Henri Diémoz, Victor Estellés, Monica Campanelli, Masahiro Momoi, Franco Marengo, Claire L. Ryder, Osamu Ijima, Akihiro Uchiyama, Kouichi Nakashima, Akihiro Yamazaki, Ryoji Nagasawa, Nozomu Ohkawara, Haruma Ishida, Yasutaka Jin, and Tomoaki Nishizawa
- 9:15 (18:15) **PSTAR/Pn-IMS: Efficient calculation of sky radiative intensity including the polarization effect in moderately thick atmospheres using a truncation approximation**  
\*Masahiro Momoi, Hitoshi Irie, Teruyuki Nakajima, and Miho Sekiguchi
- 9:30 (18:30) **Long-Term Evaluation of Skyrad pack MRI Version 2 Retrievals and Estimation of the Vertical Profile of the Short-Wave Aerosol Radiative Effect at an Alpine Site**  
Gabriele Fasano, \*Henri Diémoz, Monica Campanelli, Victor Estellés, Rei Kudo, and Anna Maria Siani
- 9:45 (18:45) **13 years of Aerosol measurements with PFR and CIMEL sun-photometers at Davos: Aerosol optical depth and trend analysis comparison**  
\*Angelos Karanikolas, Natalia Kouremeti, Julian Gröbner, Luca Egli, and Stelios Kazadzis
- 10:00 (19:00) (Break)

### Air quality in East Asia 1 [Chair: T. Dai]

- 10:15 (19:15) **Estimating contributions of black and brown carbon to solar absorption from skyradiometer measurements**  
\*Sang-Woo Kim and Chaeyoo Cho
- 10:30 (19:30) **Dependence of aerosol light scattering on the chemical composition and size of particles in Beijing haze**  
Qingxia Ma, Yunfei Wu, Shenglei Fu, Zhiwei Han, Renjian Zhang, and \*Daizhou Zhang
- 10:45 (19:45) **Aerosol optical properties at Yonsei University based on the skyradiometer measurement in 2016-2018**  
\*Ja-Ho Koo, Juhee Lee, Dha Hyun Ahn, Sujung Go, and Jhoon Kim
- 11:00 (20:00) **Classifying aerosol types over Japan by k-means clustering from sky-radiometer observations**  
\*Hiroyasu Kobayashi, Hitoshi Irie, Masahiro Momoi, and Takeru Ohno
- 11:15 (20:15) (Break)

### Air quality in South Asia 1 [Chair: U. C. Dumka]

- 11:30 (20:30) **Aerosol Black Carbon over India from Satellite (GOSAT-2 CAI-2) and Ground-based (ARFINET) Measurements**  
\*Mukunda M Gogoi, S Suresh Babu, Ryoichi Imasu, and Makiko Hashimoto
- 11:45 (20:45) **Climatological aspects of size-resolved column aerosol optical properties over a rural site in the southern peninsular India**  
\*B.L. Madhavan, M. Venkat Ratnam, A. Sai Krishnaveni, and V. Ravi Kiran
- 12:00 (21:00) **Source Apportionment of Total Suspended Particulate in the Central Himalayan Region**  
\*Rahul Sheoran, Umesh Chandra Dumka, Dimitris G. Kaskaoutis, and Georgios Grivas
- 12:15 (21:15)  
To (Poster Core Time)  
13:15 (22:15)

## ■Day 3, November 11 (Thr)

### Cloud [Chair: A. Damiani]

- UTC (JST)
- 9:00 (18:00) **Important factors affecting the relationship between sky radiometer and satellite observed cloud properties**  
\*Pradeep Khatri, Tadahiro Hayasaka, Hitoshi Irie, and Tamio Takamura
- 9:15 (18:15) **Discrimination of the cloud cover from ground-based sky images**  
\*Takashi Y. Nakajima, Takashi M. Nagao, Nagai Shin, Kanta Shimizu, and Tsukasa Eto
- 9:30 (18:30) **Retrieval of cloud top pressure with GF5/DPC satellite measurement polarization data**  
\*Wei Lesi, Husi Letu, and Shang Huazhe
- 9:45 (18:45) **The spectral dependency of the cirrus cloud backscattering by lidar and radar soundings in SKYNET Hefei Site**  
\*Zhenzhu Wang, Dong Liu, Chenbo Xie, Yingjian Wang, Anatoli Borovoi, and Alexander Konoshonkin
- 10:00 (19:00) (Break)

### Air quality in South Asia 2 [Chair: B. L. Madhavan]

- 10:15 (19:15) **Increasing aerosol burden over the foothills of the Himalaya**  
\*Shantikumar S. Ningombam, Mugil, S. K., and Umesh Chandra Dumka
- 10:30 (19:30) **Water vapour radiative forcing at high-altitude Himalayan sites**  
\*U. C. Dumka, D. G. Kaskaoutis, Pradeep Khatri, and Shantikumar S. Ningombam
- 10:45 (19:45) **Long-term variations of NO<sub>2</sub>, SO<sub>2</sub>, HCHO, and CHOCHO over the Himalayan foothills: Observations from MAX-DOAS, TROPOMI, and GOME-2**  
\*Prajwal Rawat, Manish Naja, H. Irie, Christophe Lerot, and S. Lal
- 11:00 (20:00) (Break)

### Air quality in East Asia 2 [Chair: S.-W. Kim]

- 11:15 (20:15) **Dust aerosol optical property and vertical profile in the hinterland of Taklimakan Desert**  
\*Jianrong Bi, Zhengpeng Li, Dapeng Zuo, Fan Yang, Zhongwei Huang, and Jianping Huang
- 11:30 (20:30) **Aerosol data assimilation using the ensemble kalman filter**  
\*Tie Dai, Yueming Cheng, Daisuke Goto, Hiroshi Murakami, Mayumi Yoshida, Guangyu Shi, and Teruyuki Nakajima
- 11:45 (20:45) **Lidar ratios determined from CALIOP and ground-based lidars using AODs from MODIS and sky radiometers as a constraint in East Asia**  
\*Man-Hae Kim, Sang-Woo Kim, Soojin Park, Tomoaki Nishizawa, and Atsushi Shimizu
- 12:00 (21:00) **Aerosols direct radiative effect combined ground-based Lidar and Sun-photometer observations: a comparison between haze and dust events in Beijing**  
\*Yuanxin Liang, Huizheng Che, Hong Wang, Wenjie Zhang, Lei Li, Yu Zheng, Ke Gui, Peng Zhang, and Xiaoye Zhang
- 12:15 (21:15) **Closing remark: Teruyuki Nakajima**

## ■Poster

- 1 **RSTAR/WV-CKD: Development of the look-up table of the k-distribution in the gas absorption region around 940 nm for the sky-radiometer data analysis**  
\*Masahiro Momoi, Hitoshi Irie, Miho Sekiguchi, Teruyuki Nakajima, and Hideaki Takenaka
- 2 **On MERRA-2 AOD Data Corrected based on Validation Using Ground-based Observations in Phimai, Thailand**  
\*Takeru Ohno, Hitoshi Irie, and Arlindo M da Silva
- 3 **Relationship between aerosol concentrations and meteorological factors in Nara basin with ground-based optical observations**  
\*Misato Kamiya, Mayu Nakagawa, Makoto Kuji
- 4 **The single scattering albedo obtained at Valencia (Spain) from in-situ scattering and absorption measurements**  
\*V. Matos, J. Camarasa, S. Segura, A.R. Esteve, V. Estellés, G. Fasano, H. Diemoz, M. Campanelli, M.P.Utrillas, and J.A. Martínez-Lozano
- 5 **Inter-comparison between the Aerosol Optical Properties Retrieved by Different Inversion Methods from SKYNET Sky Radiometer Observations over Qionghai and Yucheng in China**  
\*Zhe Jiang, Minzheng Duan, Huizheng Che, Wenxing Zhang, Teruyuki, Nakajima, Makiko Hashimoto, Bin Chen, and Akihiro Yamazaki
- 6 **Aerosol and cloud properties over a coastal area from aircraft observations in Zhejiang, China**  
\*Yunfei Che, Jing Zhang, Chuanfeng Zhao, Chungang Fang, Xu Zhou, and Jing Duan
- 7 **Aerosol optical properties and lidar ratio retrieved from ground-based sky-radiometer and Raman lidar measurements over an urban site of north-western China**  
\*Jingjing Liu, Jingtao Liu, Kailiang Li, Qing Yan, Jun Wang, Fei Gao, Hao Chen, and Dengxin Hua
- 8 **Analysis of aerosol optical characteristics from ground in Beijing and its response to environmental factors**  
\*Xiaofei Dong, Bin Chen, Akihiro Yamazaki, Akihiro Uchiyama, Rei Kudo, and Guangyu Shi
- 9 **Investigating the monthly and diurnal variation of AOD from HSRL measurements in Seoul, Korea**  
\*Soojin Park, Sang-Woo Kim, Man-Hae Kim, Robert Holz, and Ralph Kuehn
- 10 **Comparison and analysis of cloud optical properties over Beijing based on satellite data and sky radiometer**  
\*Wenxin Guo, Huizheng Che, Quanliang Cheng, and Zhisheng Xiao
- 11 **Cloud geolocation estimation from all-sky-view cameras**  
\*Wanyi Xie, Yiren Wang, Yingwei Xia, and Dong Liu
- 12 **Retrieval of Cloud Top Parameters from Himawari-8 Measurements**  
\*Ri Xu and Husi Letu
- 13 **Retrieval of Surface Solar Radiation from Himawari-8 measurements**  
\*Run Ma, Husi Letu, and Takashi Y. Nakajima