Day 1: Aug. 31, 2023
TKP Sapporo Station Conference Center

Opening Remarks [13:00~13:10]

A. Session A [13:10~15:10]
Computation, (Chair: H. Yashiro)

[1]   *Kengo Nakajima (U. Tokyo) [13:10~13:30]
[Innovative Supercomputing by Integration of Simulation/Data/Learning at the Information Technology Center, The University of Tokyo]

[2]   *Hisashi YASHIRO (NIES) [13:30~13:50]
[Performance, scalability, and portability of Nonhydrostatic ICosahedral Atmospheric Model on GPUs]

[3]   Kazuya YAMAZAKI (U. Tokyo) [13:50~14:10]
[Porting MIROC-SCALE Super-parameterization to GPU using OpenACC]

[4]   *Ryoga ISHIDA (JMA) [14:10~14:30]
[GPU porting of ASUCA using OpenACC directives]

[5]   Tsuyoshi YAMAURA (RIKEN) [14:30~14:50]
[Potential for Improving Ensemble Forecast Accuracy Using Mixed Floating-Point Numbers]

[6]   *Anurag DIPANKAR (ETH) [14:50~15:10]
[EXCLAIM: a python-based test driven development for km-scale global modelling]

Day 1: Aug. 31, 2023
TKP Sapporo Station Conference Center

B. Session B [15:20~18:00]
Machine Learning, Numerical Prediction, Ocean Modeling
(Chair: M. Inatsu)

[1]   Lin LI (RIKEN) [15:20~15:40]
[Exploring Potential Typhoon Control with Deep Reinforcement Learning]

[2]   Yiwen MAO (Hokkaido Univ.) [15:40~16:00]
[Temporally extending the prediction of surface winds from Regional Climate Models by Machine Learning]

[3]   Shigenori OTSUKA (RIKEN) [16:00~16:20]
[Toward 3D precipitation nowcasting by fusing NWP-DA-AI: application of adversarial training]

[4]   *Pierre TANDEO (IMT) [16:20~16:40]
[Narrowing Uncertainties of Climate Projections using Data-driven Methods]

[5]   Takemasa MIYOSHI (RIKEN) [16:40~17:00]
[PREVENIR: Japan-Argentina Cooperation Project for Heavy Rain and Urban Flood Disaster Prevention]

[6]   Arata AMEMIYA (RIKEN) [17:00~17:20]
[A short-range data assimilation and numerical weather prediction system using the LETKF for urban areas in Argentina]

[7]   Sebastián LOPEZ (IDIT) [17:20~17:40]
[Numerical Weather Prediction performance assessment using a distributed hydrological model]

[8]   Yoshimasa MATSUMURA (U. Tokyo) [17:40~18:00]
[A nonhydrostatic ocean model for multi-scale/multi-process simulations]

Day 2: Sep. 1, 2023

Meeting Room 1, Conference Hall of Hokkaido University

C. Session C [8:45~10:25]

Cloud Physics, Radiation, Lightning 1, (Chair: A. Hashimoto)

[1]   *Wojciech W. GRABOWSKI (NCAR) [8:45~9:05]
[Lagrangian modeling of cloud microphysics: progress and prospects]

[2]   Manhal ALHILALI (Univ. Hyogo) [9:05~9:25]
[Unraveling the Microphysics of Isolated Cumulonimbus Clouds: Advances in Simulation with the Super-Droplet Method (SDM)]

[3]   Akihiro HASHIMOTO (MRI) [9:25~9:45]
[Process-oriented simulations of winter snowfall in Japan]

[4]   Moeka KAMADA (Hokkaido Univ., Presented by Yousuke SATO) [9:45~10:05]

[Future change of the solid precipitation in Hokkaido, Japan ~ an insight from process tracking cloud microphysical model]

[5]   Yasutaka IKUTA (JMA) [10:05~10:25]

[Effects of introducing three types of snow particle shapes and bimodal raindrops size distribution into cloud microphysics scheme]

Day 2: Sep. 1, 2023

Auditorium, Conference Hall of Hokkaido University

D. Session D [8:45~10:25]

Data Assimilation 1, (Chair: S. Otsuka)

[1]   *Rong KONG (Univ. of Oklahoma) [8:45~9:05]

[Direct Assimilation of GOES-R Geostationary Lightning Mapper (GLM) Data within JEDI LETKF and Hybrid System for Operational UFS Convection-Allowing Predictions]

[2]   Jianyu LIANG (RIKEN) [9:05~9:25]

[Exploring the Advantages of Assimilating High Temporal Frequency Satellite Microwave Radiances]

[3]   Rakesh Teja KONDURU (RIKEN) [9:25~9:45]

[Diagnostic Scale Decomposition of RMSE in Data Assimilation: Insights from OSSEs with NICAM-LETKF]

[4]   Takemasa MIYOSHI (RIKEN) [9:45~10:05]

[Toward efficient control of extreme weather events]

[5]   Yasumitsu MAEJIMA (RIKEN) [10:05~10:25]

[A Control Simulation Experiment for August 2014 Severe Rainfall Event Using a Regional Model]

Day 2: Sep. 1, 2023

Meeting Room 1, Conference Hall of Hokkaido University

E. Session E [10:35~12:15]

Cloud Physics, Radiation, Lightning 2, (Chair: Y. Miyamoto)

[1]   Yuki KANNO (CRIEPI) [10:35~10:55]
[Evaluation of cloud microphysics schemes in WRF for Hokuriku winter clouds using videosonde observations]

[2]   Yoshiaki MIYAMOTO (Keio Univ.) [10:55~11:15]
[Effects of Number Concentration of Cloud Condensation Nuclei on Moist Convection Formation]

[3]   Anu GUPTA (Tokyo Metropolitan Univ.) [11:15~11:35]
[Aerosol induced rare winter hailstorm in dry region of North India]

[4]   Woosub ROH (Univ. Tokyo) [11:35~11:55]
[Applications of a global nonhydrostatic model to test retrieval algorithms for the EarthCARE satellite]

[5]   Ken HIRATA (Univ. Colorado, Boulder) [11:55~12:15]
[Improving Representation of Scattered Radiation in Three-Dimensional Radiative Transfer Calculations for High-Resolution Numerical Models]

Photo Session [12:15~12:30]

Day 2: Sep. 1, 2023

Auditorium, Conference Hall of Hokkaido University

F. Session F [10:35~11:55]

Data Assimilation 2, (Chair: M. Minamide)

[1]   Ken SAWADA (MRI) [10:35~10:55]
[Consideration of distortion from Gaussian error distribution in relative humidity assimilation]

[2]   Takuya KAWABATA (MRI) [10:55~11:15]
[The impact-based forecasting with a large-ensemble DA]

[3]   Masashi MINAMIDE (Univ. Tokyo) [11:15~11:35]
[Predictability of moist convection through ensemble convective-scale data assimilation]

[4]   *Juan RUIZ (Univ. Buenos Aires) [11:35~11:55]
[Assimilation of C-band radar data using the SCALE-LETKF system: A supercell case study during the RELAMPAGO field campaign]

Photo Session [12:15~12:30]

Day 2: Sep. 1, 2023
Meeting Room 1, Conference Hall of Hokkaido University

G. Session G [13:30~15:30]
Cloud Physics, Radiation, Lightning 3, (Chair: Y. Sato)

[1]   Yousuke SATO (Hokkaido Univ.) [13:30~13:50]
[Overview of bulk lightning model coupled with a Japanese community model SCALE]

[2]   Makoto KONDO (Hokkaido Univ.) [13:50~14:10]
[Effect of graupel growth on the increase in lightning activity preceding severe wind]

[3]   Ruyi ZHANG (East China Normal Univ.) [14:10~14:30]
[Evaluation of the effect of electro-coalescence with conducting sphere approximation on the formation of warm cumulus cloud and stratocumulus cloud]

[4]   Sho KAWAZOE (Hokkaido Univ.) [14:30~14:50]
[Preliminary investigation on the future changes in lightning frequency in Japan using a bulk lightning model]

[5]   Akira NODA (JAMSTEC) [14:50~15:10]
[Relationship between tropical high clouds and atmospheric circulations, and its future changes]

[6]   Junichi TANOSHITA (JMA) [15:10~15:30]
[Evaluation of vertical transport of cumulus convection parametrization using LES]

Day 2: Sep. 1, 2023

Auditorium, Conference Hall of Hokkaido University

H. Session H [13:30~15:30]

Event Analyses, (Chair: K. Sueki)

[1] Kenta SUEKI (MRI) [13:30~13:50]
[Numerical Experiment on a Line-shaped Precipitation System Occurred in Kochi, Japan in Early July 2022]

[2] Hao-Yan LIU (Hohai Univ.) [13:50~14:10]
[What controlled the low-level moisture transport during the extreme precipitation in Henan Province of China in July 2021?]

[3] Saori NAKASHITA (Kyoto Univ.) [14:10~14:30]
[Ensemble simulations of a mesoscale convective system over East China Sea on 19 June 2022]

[4] Cathrene LAGARE (Touhoku Univ.) [14:30~14:50]
[Mesoscale Convective Systems Under Weak Large-Scale Conditions over Mindanao, Philippines]

[5] Abhinav DENGRI (Hokkaido Univ.) [14:50~15:10]
[Comparing Large-Scale Atmospheric Circulation Patterns Associated with 2022 and 2010 Extreme Rainfall Events in Pakistan]

[6] Takeshi ENOMOTO (Kyoto Univ.) [15:10~15:30]
[Sensitivity to surface fluxes in the simulations of medicane Apollo (2021)]

Day 2: Sep. 1, 2023

Meeting Room 1, Conference Hall of Hokkaido University

I. Session I [15:40~17:40]

Global Storm-Resolving Simulations, (Chair D. Takasuka)

Session I is held as a Special Session of the Japan Society for the Promotion of Science (JSPS) Core-to-Core Program "International Core-to-Core Project on Global Storm Resolving Analysis" (ICCP-GSRA; grant number: JPJSCCA20220001)."

[1] Shuhei MATSUGISHI (Univ. Tokyo) [15:40~16:00]

[Clouds, convection, and precipitation in the global few hundred-meter simulations]

[2] Christopher ELDRED (Sandia National Laboratories) [16:00~16:20]

[Global convection permitting climate simulations with the Simple Cloud-Resolving E3SM Atmosphere Model (SCREAM)]

[3] Shao-Yu TSENG (National Taiwan Univ.) [16:20~16:40]

[Tracking the Rainfall Structure in DYAMOND Convection Permitting Models over the Northwest Pacific]

[4] Daisuke TAKASUKA (Univ. Tokyo) [16:40~17:00]

[Benefits and Issues in the Kilometer-scale Atmospheric Climate Simulation with NICAM]

[5] Hans SEGURA (MPI) [17:00~17:20]

[Understanding tropical precipitation by using a global-coupled storm-resolving model]

[6] Tsung-Lin HSIEH (Princeton Univ.) [17:20~17:40]

[Western US wintertime precipitation and response to warming in GFDL X-SHiELD]

Day 2: Sep. 1, 2023
Auditorium, Conference Hall of Hokkaido University

J. Session J [15:40~18:00]

Tropical Cyclone, (Chair: R. Yoshida)

[1] *Alexander KHAIN (Hebrew Univ.) [15:40~16:00]
[Effects of sea spray on intensity of tropical cyclones]

[2] Ryuji YOSHIDA (Yokohama National Univ.) [16:00~16:20]
[Ideal numerical simulations for modification of tropical cyclone from the microphysical approach in the Typhoonshot-MS program]

[3] Yuki HIROSE (Univ. Tokyo) [16:20~16:40]
[Parameter estimation of an atmospheric model using geostationary satellite data to improve prediction of tropical cyclones]

[4] Masuo NAKANO (JAMSTEC) [16:40~17:00]
[Analysis of the Factors that Led to Uncertainty of Track Forecast of Typhoon Krosa (2019) by 101-Member Ensemble Forecast Experiments Using NICAM]

[5]   Yohei YAMADA (JAMSTEC) [17:00~17:20]
       [A large ensemble simulation for seasonal scale tropical cyclone activity by a nonhydrostatic model]

[6]   Marguerite LEE (Univ. Tokyo) [17:20~17:40]
       [Reducing the Intensity of an Approaching Typhoon Forced by an Artificial Cold Pool Using the Stretched Version of a Non-hydrostatic Icosahedral Atmospheric Model (NICAM)]

[7]   Yutaro NIRASAWA (Univ. Tokyo) [17:40~18:00]
       [The impact of air-sea interaction on the fluctuation of the monsoon trough in ensemble experiments with a coupled general circulation model]

Day 3: Sep. 2, 2023

Meeting Room 1, Conference Hall of Hokkaido University

K. Session K [8:45~10:25]

Framework, (Chair: T. Yamaguchi)

[1]   *Takanobu YAMAGUCHI (Univ. Colorado, Boulder) [8:45~9:05]
       [Aerosol-cloud interactions in high resolution, idealized two-dimensional Hadley circulation simulations]

[2]   Christopher ELDRED (Sandia National Laboratories) [9:05~9:25]
       [A multiscale modeling framework (MMF) for the E3SM climate model]

[3]   Chien-Ming WU (National Taiwan Univ.) [9:25~9:45]
       [TaiwanVVM: Current Advancements and Future Development]

[4]   Jin-De HUANG (National Taiwan Univ.) [9:45~10:05]
       [Development of Tropical Circulation Vector Vorticity Equation Cloud-resolving Model]

[5]   Yasushi FUJIWARA (Kobe Univ.) [10:05~10:25]
       [A numerical model for the direct simulation of wind-wave interaction]

Day 3: Sep. 2, 2023

Auditorium, Conference Hall of Hokkaido University

L. Session L [8:45~10:25]

Urban Modeling, Local Scale Phenomena, (Chair: T. Sato)

[1]   Takuto SATO (Univ. Tsukuba) [8:45~9:05]
[Recent Development of City-Scale Large-Eddy Simulation model "City-LES"]

[2]   Angela Monina MAGNAYE (Univ. Tsukuba) [9:05~9:25]
[Sensitivity tests of WRF-UCM simulations of extreme heat events in Metro Manila]

[3]   Tatsuki KUDO (Univ. Tsukuba) [9:25~9:45]
[The valuable local winds "Obonai-dashi" simulated by the WRF model]

[4]   Nobuyasu SUZUKI (Univ. Tsukuba) [9:45~10:05]
[Effect of "Sado Island Block" on Snowfalls in Niigata City and the coastal plain]

[5]   Shigetoshi SAITO (Univ. Tokyo) [10:05~10:25]
[Ensemble simulations of a heavy snowfall event in the Kanto area in Japan on Jan 22nd, 2018]

Day 3: Sep. 2, 2023

Meeting Room 1, Conference Hall of Hokkaido University

M. Session M [10:35~10:55]

Dynamical Core, LES, (Chair: J. Ito)

[1]   Willam SKAMAROCK (NCAR) [10:35~10:55]
[Optimal Configurations for Storm-Resolving Atmospheric Simulations]

[2]   Junshi ITO (Touhoku Univ.) [10:55~11:15]
[Large eddy simulation with a parameterization of fluctuating surface momentum fluxes]

[3]   Yuta KAWAI (RIKEN) [11:15~11:35]
[Development of a global atmospheric nonhydrostatic dynamical core using discontinuous Galerkin method]

[4]   Daisuke HOTTA (MRI) [11:35~11:55]

[OctaHEALPix grid: a new, equal-area quadrilateral grid on a sphere which admits spherical harmonics transform]

[5]   Shun-ichi WATANABE (MRI) [11:55~12:15]

[Dependency of the entrainment rate on the grid spacing]

Closing Remarks [12:15~12:30]

Day 3: Sep. 2, 2023

Auditorium, Conference Hall of Hokkaido University

N. Session N [10:35~12:15]

Radiative Convective Equilibrium, Convection

(Chair: T. Yanase)

[1]   Tomoro YANASE (RIKEN) [10:35~10:55]

[Characteristic horizontal structure of large-scale self-aggregation of clouds in radiative–convective equilibrium]

[2]   Ming ZHAO (GFDL/NOAA) [10:55~11:15]

[A Study of Convective Clouds in Radiative Convective Equilibrium Using GFDL FV3 Based Non-hydrostatic Cloud Resolving Model]

[3]   Wei-Ting CHEN (National Taiwan Univ.) [11:15~11:35]

[Novel Perspectives on Diurnal Convection over Complex Topography through VVM Simulations]

[4]   Pier SIEBESMA (Delft Univ. of Technology, Presented by Fredrik JANSSON) [11:35~11:55]

[EUREC^{4}A-MIP: A Model Intercomparison Project on Mesoscale Organisation of shallow cumulus clouds in a present and future climate.]

[5]   Fredrik JANSSON (Delft Univ. of Technology) [11:55~12:15]

[Cloud Botany - a shallow cumulus ensemble of large eddy simulations]

Closing Remarks [12:15~12:30]