

Oral Presentation Program

Blue = Student Presenter

Day 1: July 16 (Wed)

0930-0940 Opening remarks

0940-1000 **Eitarou Oka** Habitable Japan: Sustainability of atmospheric and oceanic environment as a survival basis of island country Japan

Session 1 Ocean currents and Water masses I (Chair: Shusaku Sugimoto and Yu-Xiang Qiao)

1000-1020 **Bo Qiu (invited)** A New Dynamic Regime in the Kuroshio/Kuroshio Extension and the North Pacific Climate System after 2018

1020-1035 **Yuma Kawakami** Ocean current changes in the western North Pacific

1035-1050 **Yi Wang** Asymmetric Changes of March Deep Mixed Layer Depth on the Northern and Southern Kuroshio Extension from 1980 to 2024

1050-1105 **Gaku Nishihira** Change in the atmospheric forcing increases wintertime sea surface temperature in the subpolar region around Japan

1105-1120 **Jing Liu** Extreme Ventilation of the North Pacific Central Mode Water by El Niño During Positive Phase of the Pacific Decadal Oscillation

1120-1150 Coffee Break

Session 2 Ocean currents and Water masses II (Chair: Norihisa Usui and Hatsumi Nishikawa)

1150-1210 **Espe Broullón Mandado (invited)** The importance of diapycnal and isopycnal mixing in the subtropical thermocline

1210-1230 **Qiang Wang (invited)** Causal linkage between eddy kinetic energy over the Kuroshio extension and the Kuroshio large meander regions

1230-1245 **Kento Usui** Importance of geostrophic shear on eddy-induced Ekman pumping and associated vertical heat transport in the Kuroshio Extension region

1245-1300 **Shuya Wang** Topographically generated submesoscale processes in the Tokara Strait

1300-1410 Lunch Break

Session 3 Teleconnection and Extreme events (Chair: Yu Kosaka and Jeong-Hun Kim)

1410-1430 **Haiyan Teng (invited)** Boreal Summer Warming in the Northern Hemisphere Midlatitudes: Can we Disentangle the Forced Response from the Internal Variability?

1430-1445 **Ko Tsuchida** The triple-dip La Niña was key to Earth's extreme heat uptake in 2022-2023

1445-1500 **Tomoki Miyakawa** Constraining the upper-ocean state toward reality in sub-seasonal high-resolution atmosphere-ocean coupled simulations

1500-1515 **Tianjiao Ma** Causal networks for winter cold and wet extremes in East Asia

1515-1530 **Yu Kosaka** Weakening of the Silk Road teleconnection under global warming

1530-1600 Coffee Break

1600-1730 **Poster Session I (Core time: 1600-1700)**

1800-2000 **Reception**

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Day 2: July 17 (Thu)

0930-0940 Announcement

Session 4 Storm track and Extratropical SST impact (Chair: Meiji Honda and Hidetaka Hirata)

0940-1000 **Thomas Spengler (invited)** Impact of diabatic processes on midlatitude storm tracks: Role of sea surface temperature

1000-1015 **Andrea Marcheggiani** Baroclinicity variability in storm tracks along western boundary currents

1015-1030 **Fumiaki Ogawa** Impact of SST Fronts on the Atmospheric Water Cycle and Storm-track Activity

1030-1045 **Yu-Xiang Qiao** Role of Kuroshio Warming in Intensifying the Mei-yu-baiu Rainband: A Quantitative Study

1045-1100 **Rakesh Teja Konduru** Kuroshio SST Influence on Spatiotemporal Rainfall Patterns in Kyushu Islands

1100-1130 Coffee Break

Session 5 Biogeochemistry (Chair: Katsuya Toyama and Ryohei Yamaguchi)

1130-1150 **Seth Bushinsky (invited)** Mode Water ventilation of the Pacific: air-sea uptake and transport through the interior

1150-1205 **Ryohei Yamaguchi** Understanding the biological carbon pump and its transfer efficiency from dissolved oxygen observations

1205-1220 **Shinichiro Kida** A hybrid Eulerian-Lagrangian model for simulating the marine ecosystem

1220-1235 **Clara Rodriguez Vives** Using Argo-float and satellite observations to understand NPP uncertainties in climate models in the northwest Pacific

1235-1355 Lunch Break

Session 6 Marine ecosystem (Chair: Yumiko Obayashi and Sachiko Horii)

1355-1415 **Hyung-Gyu Lim (invited)** Oceanic and Atmospheric Drivers of Marine Ecosystem Predictability

1415-1430 **Lokman Nor Hakim Norazmi** Aquaculture Under Climate Stress: Shared Challenges and Solutions for Malaysia and Japan

1430-1445 **Young-Min Yang** Siberian Greening Intensifies Coastal Spring Chlorophyll Blooms in Western North America

1445-1500 **Shin-ichi Ito** Fish weight reduction in response to intra- and interspecies competition under climate change

1500-1530 Coffee Break

1530-1700 **Poster Session II (Core time: 1530-1630)**

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Day 3: July 18 (Fri)

0930-0940 Announcement

Session 7 Marine heatwaves and Extreme rainfall (Chair: Tomonori Sato and Xiling Zhou)

- 0940-1000 **Seok-Woo Son (invited)** Atmospheric Rivers in East Asia: Present and Future
1000-1015 **Hidetaka Hirata** Significant impact of marine heatwaves associated with the Kuroshio Extension large meander on extreme rainfall/snowfall
1015-1030 **Satoru Okajima** Marine heatwave significantly exacerbates the record-breaking 2023 East Asian summer heatwave
1030-1045 **Gowri Vijaya Lekshmi** Investigating the Interaction Between Marine Heatwaves and Tropical Cyclones in the Bay of Bengal
1045-1100 **Hisashi Nakamura** Interactions of Recent Extreme Marine Heatwaves around Japan with Atmospheric Heatwaves

1100-1130 Coffee Break

Session 8 Data assimilation and Machine learning (Chair: Yosuke Fujii and Hakase Hayashida)

- 1130-1150 **Andrea Storto (invited)** Correction of Sea Surface Biases Using Neural Networks
1150-1205 **Saori Nakashita** Flow-dependent large-scale blending for limited-area ensemble data assimilation
1205-1220 **Takeshi Enomoto** Challenges and opportunities in hotspot data assimilation

1220-1345 Lunch Break

Session 9 Air-sea boundary (Chair: Yoko Iwamoto and Hakase Hayashida)

- 1345-1400 **Hidenori Aiki** Numerical experiment on the vertical structure of the wave boundary layer under strong winds
1400-1415 **Yoko Iwamoto** Cloud condensation nucleus activity of marine aerosols over the western North Pacific in summer 2023
1415-1430 **Yumiko Obayashi** Assessing the “Ocean’s skin” in summer: Biogeochemical study at sea surface in the western North Pacific

1430-1500 Coffee Break

1500-1600 **Discussion, Closing**

List of Poster Presentations

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Day 1: July 16 (Wed) 1600-1730 (core time: 1600-1700)

- P01 Yang Ding** Mesoscale and sub-mesoscale processes modulate the mixed layer depth and chlorophyll distribution in the Kuroshio-Oyashio Extension
- P03 Haruto Fujishima** Observed changes between ocean-driven and atmosphere-driven sea surface heat flux variations in the Kuroshio-Oyashio confluence region
- P05 Hakase Hayashida** BGC-Argo data assimilation: tuning and testing using a one-dimensional model
- P07 Sachiko Horii** Nitrogen input from the atmosphere via N₂ fixation and atmospheric deposition to the Kuroshio Current in early spring
- P09 Hiroki Iwasa** Characteristics of ITF bifurcation in the eastern Indian Ocean at the decadal timescale
- P11 Satoru Kasuga** Sub-Synoptic Environment For a Quasi-Stational Polar Low over the Japan Sea
- P13 Takashi Kawamura** Weakening of the North Atlantic Oscillation under global warming in large ensemble simulations
- P15 Eun-Young Kim** Understanding Structural Differences Among Ocean Biogeochemistry Models Coupled with Earth System Models
- P17 Jeong-Hun Kim** Arctic-Siberian Plain Warming and Its Role in East Asian Heat Waves
- P19 Kent Kumeta** The upper positive heat content of extratropical direct circulation by the Mass-weighted isentropic zonal means during the Northern Hemisphere winter
- P21 Lael Wakamatsu** Predicting Harmful Algal Blooms: Linking Environmental Conditions and Plankton Communities
- P23 Jovan Mihajlović** Impact of Large-Scale Atmospheric Oscillations (NAO and ENSO) on Sediment Dynamics in the Kolubara River (Serbia)
- P25 Fumiya Nagasaka** Vertical structure and regional characteristics of upper-tropospheric cold lows
- P27 Saori Sakai** Energetics of the teleconnection along the summertime Eurasian polar front jet
- P29 Ryo Satoh** Changes in atmospheric internally-driven meridional teleconnection patterns over the wintertime North Pacific under different sea surface conditions
- P31 Jing Sheng** Interannual Variability of Upper Ocean Heat Content in Subtropical Northwestern Pacific as Inferred From Argo Observations
- P33 Jun Shi** Ecological habitable indicators and the differences in extreme climate years in Shanghai, China
- P35 Masahiro Shiozaki** Projected changes of the Western Pacific teleconnection pattern
- P37 Naoya Takahashi** Seasonal Predictability of Marine Heat Waves in Summer around Hawaii
- P39 Yukito Tamura** Kuroshio Large Meander and its interaction with the Kuroshio Extension in a long-term simulation of an eddy-resolving CESM1
- P41 Hibiki Tanaka** Measurement of chemical and physical properties of sea spray aerosol using an in-situ bubbling device
- P43 Tatsuki Ueyama** Variation in North Pacific Central Mode Water abundance due to atmospheric and oceanic changes and its propagation to each distribution region
- P45 Yoo-Jun Kim** Wind-driven circulation in the coastal region across multiple timescales: importance of high-spatiotemporal wind
- P47 Xiling Zhou** Linkage between late-summer heatwaves over eastern Siberia and SST cooling in the western North Pacific

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Day 2: July 17 (Thu) 1530-1700 (core time: 1530-1630)

- P02 Yosuke Fujii** SST-Precipitation relationship represented by the JMA coupled reanalysis systems
- P04 Koji Hamasaki** Gut microbiome dynamics in juvenile chum salmon: implications for climate adaptation
- P06 Meiji Honda** An oceanic polar front in the Japan Sea captured by a shipboard observation and its impact on the atmospheric field
- P08 Shigeki Hosoda** Observation-based seasonal change in decorrelation length of the physical parameters and corrected dataset of MOAA GPV
- P10 Yoshimi Kawai** Have subduct and obduct been enhanced in the North Pacific despite the ocean warming?
- P12 Jeongho Kim** Statistical analysis of mesoscale eddies for understanding Mix Layer change in the Northwestern Pacific
- P14 Fumiaki Kobashi** Influence of North Pacific subtropical mode water variability on the surface mixed layer
- P16 Nobumasa Komori** Intercomparison of eddy-resolving ocean reanalyses around Japan
- P18 Toru Miyama** Super Kuroshio Large Meander
- P20 Takashi Mochizuki** Multiyear potential predictability of the wintertime heavy precipitation potentials tied to the transbasin variability
- P22 Hatsumi Nishikawa** Impact of Eighteen Degree Water thickness variation on the thermal and biogeochemical structure in the euphotic layer
- P24 Shunsuke Noguchi** Ocean Circulation Responses in a Stratospheric Nudging Experiment by an Earth System Model
- P26 Masami Nonaka** Extreme northward meander of the Kuroshio Extension in 2023 in an eddying OGCM
- P28 Yoshi Sasaki** Role of local wind forcing to transition of the Kuroshio Extension state around 2017: Application of wind-forced thin-jet theory
- P30 Tomonori Sato** A new pseudo-global warming experiment method based on the analogue weather event approach
- P32 Hyodae Seo** Anomalous Sea Surface Warming Driven by Large-Scale Offshore Wind Farms: Role of Mesoscale Air-Sea Interaction
- P34 Shiori Sugimoto** Construction of a near real-time ensemble DDS system for probabilistic evaluation of local-scale factors driving extreme weather events
- P36 Shusaku Sugimoto** Increase in summer precipitation and air temperature in the Tokai district due to the Kuroshio Large Meander
- P38 Bunmei Taguchi** Surface air temperature adjustment over the warm ocean
- P40 Hiroki Tokinaga** Future changes in tropical cyclone's rapid intensification over the western North Pacific under global warming
- P42 Tomoki Tozuka** Drivers of anomalous wintertime temperature around Japan revealed by neural networks
- P44 Norihisa Usui** Four-dimensional variational Ocean ReAnalysis for the seas around Japan over 60 years (FORA-JPN60)
- P46 Akira Yamazaki** Simulated climatologies of Northern Hemisphere blocking in atmospheric GCMs
- P48 Sachiko Yoshida** Interpreting Northeast Pacific Water Pathways Through Lagrangian Drifter Analysis