

International Workshop on Climate Downscaling Studies

Date: 2 - 4 October 2017

Place: Room 406, International Congress Center EPOCHAL Tsukuba

Prospectus:

Sustainable Development Goals (SDGs) are common goals for the global community to achieve. Seventeen SDGs have been determined in General Assembly of the United Nations in 2015. These goals are composed of three main topics: social issues, economic issues, and environmental issues. Climate is one of the most important factors that affect many issues across the main topics of the SDGs.

As local climate information are indispensable for the assessment of local climate or environment, downscaling has been, for more than 25 years, believed to be a good technique to produce such local climate data. On the other hand, some researchers still suggest that downscaling is only a transient research field, which would disappear if the resolution of global models (GCM) becomes high enough. There are also more optimistic suggestions that downscaling research field continues as it responds to the diverse and specific demands of impact study researchers and end-users.

In this workshop, we would like to discuss two main issues.

To guarantee the robustness of the results of downscaling, it is very important to explain the climatological and meteorological mechanism of local climate change. By using downscaling results, we have two kinds of advantages compared to AO-GCMs results.

(1) High resolution response to orography, land-use or SST.

(2) The effects of synoptic- to meso-scale phenomena.

Here, we hope to discuss on the mechanisms of local climate change, by using downscaling methods.

We will also discuss how "improved coordination between the climate study researchers and impact study researchers or end-users" can be facilitated. For this purpose, the following three topics are handled, with regard to both dynamical downscaling (DDS) and empirical statistical downscaling (ESD):

(1) Expanding the scope of application of dynamical and statistical downscaling to other sectors and research fields.

(2) Progress of interdisciplinary research using downscaling.

(3) Applications of dynamical and statistical downscaling in Asian countries.

In the workshop, we expect to have a free discussion on the potential of downscaling research.

2 October 2017				
9:30	Registration			
Opening				
10:00-10:20		Kenichi Kuma	Meteorological Research Institute	Opening Speech
		Mitsuhiko Hatori	Japan Meteorological Business Support Center	Opening Speech
		Masafumi Sato	Ministry of Education, Culture, Sports, Science and Technology	Opening Speech
Session 0: Keynote Lectures				
Chair: Izuru Takayabu, Rapporteur: Hideki Kanamaru				
10:20-11:00	0-1	Fredolin Tangang	The National University of Malaysia	Addressing Information Gaps and Data Needs for Adapting to Climate Change Impacts in the Southeast Asia Region Through the Southeast Asia Regional Climate Downscaling (SEACLID)/CORDEX Southeast Asia Project
11:00-11:30	Photo Session and Break			

11:30-12:10	0-2	Huang-Hsiung Hsu	Academia Sinica	A Brief Review of Asian Climate Variability
12:10-12:50	0-3	Liqiang Sun	North Carolina State University	Climate Downscaling for the National Climate Assessment: Practices and Challenges
12:50-14:10	Lunch Break			
<div>Session 1.1:</div> <div>Global and Regional Climate Changes</div> <div>Chair: Hideo Shiogama, Rapporteur: Hiroaki Kawase</div>				
14:10-14:40	1-1	Daniel Mitchell	University of Bristol	Future Climate, the Paris Agreement and Impacts on Society
14:40-15:00	1-2	Yukiko Imada	Meteorological Research Institute	Event Attribution with Large-Ensemble Simulations Generated by MRI-AGCM
15:00-15:20	1-3	Hideo Shiogama	National Institute for Environmental Studies	Changes in Frequencies of Extreme Events Due to the Past, 1.5°C and 2.0°C Warming
15:20-16:00	Poster Presentation and Break			
<div>Session 1.2:</div> <div>Global and Regional Climate Changes</div> <div>Chair: Shiori Sugimoto, Rapporteur: Rui Ito</div>				
16:00-16:30	1-4	Roy Rasmussen	National Center for Atmospheric Research	Dynamical Downscaling: Is it Worth it?
16:30-16:50	1-5	Sachiho A. Adachi	RIKEN	Downscaling Procedure for Evaluating Future Regional Climate Change
16:50-17:10	1-6	Hiroaki Kawase	Meteorological Research Institute	Past Simulation and Future Projection of Snowfall over Mountainous Areas in Central Japan
17:10-17:30	1-7	Kenichi Ueno	University of Tsukuba	Observing Mountain Weather Variability in Japan
17:30-17:50	1-8	Kenji Tanaka	Kyoto University	Impact Assessment of Climate Change on Snow Water Resources with Combined Use of 5kmRCM and Multi-Ensemble 60GCM
19:00	Reception at Kisoji (Shuttle bus leaves at 18:30 and 18:45)			

3 October 2017				
Session 2: Extreme Events and Downscaling Chair: Izuru Takayabu, Rapporteur: Yukari Osakada				
9:00-9:25	2-1	Izuru Takayabu	Meteorological Research Institute	Introduction of TOUGOU Theme C -Integrated Climate Projection-
9:25-9:50	2-2	Cheng-Ta Chen	National Taiwan Normal University	Regional Statistical Downscaling of Extreme Weather and Climate Indices: From Daily Data to Extreme Events
9:50-10:15	2-3	Sachie Kanada	Nagoya University	Impacts of SST Patterns on Rapid Intensification of Typhoon Megi (2010)
10:15-10:40	2-4	Yasutaka Wakazuki	Ibaraki University / JAMSTEC	Initial Bubble for Idealized Simulations of Cumulus Convections
10:40-11:00	Break			

Session 3.1: Downscaling over the Asian Countries				
Chair: Hidetaka Sasaki, Rapporteur: Sujittra Ratjiranukool				
11:00-11:25	3-1	Hyun-Suk Kang	National Institute of Meteorological Sciences, KMA	A Project on Regional Climate Change for East Asia and Korean Peninsula
11:25-11:50	3-2	Jerasorn Santisirisomboon	Ramkhamhaeng University	Downscaling of CMIP-5 GCMs for Future Climate Projection over the Area of Southeast Asia and Thailand
11:50-12:15	3-3	Faye Cruz	Manila Observatory	Evaluation of NHRCM High-Resolution Climate Simulations over the Philippines
12:15-13:40	Lunch Break			
Session 4: Interdisciplinary Studies on Regional Climate Change				
Chair: Toshiyuki Nakaegawa, Rapporteur: Gomez Garcia Martin				
13:40-14:05	4-1	Hideki Kanamaru	Food and Agriculture Organization of the United Nations	Localized Climate Data and Risk Information in Support of Transformational Climate Change Adaptation in the Agriculture Sector
14:05-14:30	4-2	Douglas Maraun	University of Graz	Challenges in Downscaling Research
14:30-14:55	4-3	Ke-Sheng Cheng	National Taiwan University	Estimating Design Rainfalls Using Dynamical Downscaling Data
14:55-15:20	4-4	Masaru Inatsu	Hokkaido University	Toward Substantial Social Implementation of Climate Change Adaptation Technology. An Advanced Attempt in Hokkaido
15:20-16:00	Poster Presentation and Break			
Session 5: CORDEX-Asia ESD				
Chair: Koji Dairaku, Rapporteur: Shaukat Ali				
16:00-16:20	5-1	Koji Dairaku	National Research Institute for Earth Science and Disaster Resilience	Hi-Resolution Multi-Ensemble Statistical Downscaling Regional Climate Scenarios
16:40-17:00	5-2	Nuzba Shaheen	Global Change Impact Studies Centre	Performance Evaluation and Statistical Downscaling of CORDEX RCMs for Impact Assessment Studies in South Asia and South East Asia
16:20-16:40	5-3	Shaukat Ali	Global Change Impact Studies Centre (GCISC), Ministry of Climate Change, Pakistan	Future Projections of Climate Extremes over Pakistan Using QM, DQM and QDM Statistical Downscaling/Bias-Correction
17:00-17:20	5-4	Ashwini Aniruddha Kulkarni	Indian Institute of Tropical Meteorology	Statistical Downscaling for South Asian Region
17:20-17:40	5-5	Seonae Kim	Kongju National University	Statistical Downscaling for Daily Precipitation in Korea Using Combined PRISM, RCM, and Quantile Mapping: Part 1. Methodology and Evaluation in Historical Simulation
18:00	CORDEX Asia ESD Business Meeting (Invitation only)			

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**Session 3.2:
Downscaling over the Asian Countries**

Chair: Faye Cruz, Rapporteur: Ngo Duc Thanh

9:00-9:25	3-4	Jun Matsumoto	Tokyo Metropolitan University	Climate of the Philippines and the Sea Surface Temperature Effect on Summer Monsoon Rainfall
9:25-9:50	3-5	Gemma Teresa Narisma	Manila Observatory / Ateneo de Manila University	Factors Behind the Inability of Regional Climate Modeling to Capture Monsoon Rainfall over the Philippines
9:50-10:15	3-6	Sanjay Jayanarayanan	Indian Institute of Tropical Meteorology	Future Changes in Land-Atmosphere Feedback over India
10:15-10:40	3-7	Ngo Duc Thanh	University of Science and Technology of Hanoi	Regional Climate Downscaling over Vietnam: Time of Emergence in Temperature and Precipitation Changes
10:40-11:00	Break			

Wrap-up

Chair: Izuru Takayabu

11:00-12:00	0	Hideki Kanamaru	Food and Agriculture Organization of the United Nations	Keynote Lecture Summary Report
	1.1	Hiroaki Kawase	Meteorological Research Institute	Session 1.1 Summary Report
	1.2	Rui Ito	Japan Meteorological Buisness Support Center	Session 1.2 Summary Report
	2	Yukari Osakada	Kyoto University	Session 2 Summary Report
	3.1	Sujittra Ratjiranukool	Chiang Mai University	Session 3.1 Summary Report
	3.2	Ngo Duc Thanh	University of Science and Technology of Hanoi	Session 3.2 Summary Report
	4	Gomez Garcia Martin	Nippon Koei Co.,Ltd. R&D Center	Session 4 Summary Report
	5	Shaukat Ali	Global Change Impact Studies Centre (GCISC), Ministry of Climate Change, Pakistan	Session 5 Summary Report
		Izuru Takayabu	Meteorological Research Institute	Summary of Workshop

End of the Workshop

PM	CORDEX Asia ESD Project Meeting @NIED Meeting Room (Invitation only)
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Poster Presentation

P-1	Chao-Tzuen Cheng	National Science and Technology Center for Disaster Reduction of Taiwan	Dynamical Downscaling of Typhoon Events in Climate Projection of GFDL High-Resolution AGCM, HiRAM
P-2	Nobuhiko Endo	National Agriculture and Food Research Organization	Characteristics of Surface Incoming Solar Radiation in Japan: Comparison between In-situ Observations and a Large Ensemble of Regional Climate Simulations by NHRCM
P-3	Martin Gomez Garcia	Nippon Koei Co.,Ltd. R&D Center	Stochastic Downscaling of Rainfall Fields Using a Multi-Scale Analysis of Local Fluctuations
P-4	Pham Thanh Ha	VNU-Hanoi University of Science	Predictability of the Rainy Season Onset in Central Highlands
P-5	Noriko N. Ishizaki	National Research Institute for Earth Science and Disaster Resilience	Probabilistic Climate Projection for Japan with a Statistical Method Using CMIP5 Multi-Model Ensemble Experiments
P-6	Rui Ito	National Research Institute for Earth Science and Disaster Resilience	Improved Representation of Urban Snow in NHRCM with a New Snowpack Scheme on SPUC
P-7	Keitaro Morimoto	Kyoto University	Analysis of Future Changes of Small-scale Torrential Rainfall under Global Warming Using MRI-NHRCM Output
P-8	Sridhara Nayak	National Research Institute for Earth Science and Disaster Resilience	The Interconnection Between Extreme Precipitation Events and Atmospheric Rivers over Japan
P-9	Motoki Nishimori	National Agriculture and Food Research Organization	Regression-Based Statistical Downscaling for Multi Agro-Meteorological Elements over Japan and Their Comparison with Dynamical Downscaling Results
P-10	Yukari Osakada	Kyoto University	Multiscale Analysis on the Future Change of Heavy Rainfall in Baiu Season
P-11	Sujittra Ratjiranukool	Chiang Mai University	Dynamical Downscaling for Precipitation Simulation over Thailand Using NHRCM
P-12	Nuzba Shaheen	Global Change Impact Studies Centre (GCISC), Ministry of Climate Change, Pakistan	User Oriented Applications of Climate data: Performance Evaluation and Statistical Downscaling of CORDEX-RCMs for Impacts Studies in South Asia
P-13	Shiori Sugimoto	Japan Agency for Marine-Earth Science and Technology	Importance of Dynamical Downscaling with High-Resolution for Evaluating Simulated near Surface Temperature over the Mountainous Regions
P-14	Yu-Shiang Tung	National Science and Technology Center for Disaster Reduction of Taiwan	Extreme Temperature Change in Taiwan