

## SUMMARY

### **The 4th International Science and Planning Workshop on YMC Institute of Environment Science & Meteorology / University of the Philippines Quezon, Philippines, February 26-28, 2019**

#### ***1) Introduction***

The fourth international YMC workshop was held in February 26-28, 2019 at the Institute of Environmental Science and Meteorology (IESM) / University of the Philippines (UP) in Quezon, Philippines. It was hosted by the IESM (with support from UP through the Office of International Linkages), in cooperation with UP-Marine Science Institute (MSI), Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), and Manila Observatory (MO), and in partnership with Marine Environment & Resources Foundation Inc. (MERF). The main objectives of this workshop are 1) to review and exchange new knowledge based on preliminary results from finished Intensive Observation Periods (IOPs) as well as relevant research topics, 2) to coordinate observations and modeling activities for the coming IOPs, and 3) to discuss the YMC key activities such as data management and future direction. About 70 people from 10 countries and regions attended the workshop. The workshop agenda is given in Appendix A, while the participants list is given in Appendix B.

#### ***2) Brief summary of sessions***

On the first day, the workshop started with reviews of the progress since the third workshop at UKM in Bangi, Malaysia, March 2017, which corresponded to the timing before the commencement of the YMC field campaign phase. This is the biggest difference from the last workshop. Thus, presentations included the overview talks of finished and/or ongoing IOPs such as RSVP, YMC-Sumatra 2017, YMC-BSM 2018, SCSTIMX, PISTON, as well as preliminary results of analysis and modeling studies obtained from those campaigns. In addition, several reports for relevant field campaign in the MC and adjacent regions were also made from colleagues in Korea, Thailand, and Australia. It deserves to note that a data assimilation study done by CCRS indicated an essence of the campaign, as they showed a possibility of forecast skill improvement using data obtained during pre-YMC 2015 and YMC-Sumatra 2017 campaigns, where they were not directly involved in the field campaign but they could obtain high-resolution data under the YMC framework. Namely, it verified that local forecast centers could get feedback through the campaign. The participants confirmed this can be a role model for future collaborations and its relationship should be applied onto other MC regions, where even no IOPs are planned.

On the following day, numerical modeling studies as well as observational results were introduced in the morning sessions. Some of them were directly involved in the field campaigns such as SCSTIMX, PISTON, and TerraMaris. At the end of morning session, useful information were provided for the procedures of getting research permission in Indonesia and the Philippines. While researchers recognize them as necessary steps, usually they do not go through like the way the manuals mention. Tight communication with local authorities through the local partner is still essential. The participants could have a chance to interact with them during this workshop. In the afternoon session, the upcoming and ongoing IOPs were introduced. They included US YMC-Banda Sea cruise, Australian R/V Investigator cruise, UK TerraMaris project, and US CAMP<sup>2</sup>Ex. The first three are planned to take place in late 2019 to early 2020 with Indonesian counterparts from BMKG, BPPT, and LAPAN, and the last one is planned to take place around the

Philippines from late August to early October, 2019 with Filipino colleagues and it is expected to collaborate with PISTON. In addition, YMC community welcomed to have a new IOP based on China-Australia collaboration; MAMOS (MJO and Australian Monsoon Onset Study) and CSHOR's field program - Coupled Warm Pool Dynamics in the Indo-Pacific. Both target air-sea interaction in the eastern Indian Ocean northwest of Australia. At the end of this session, characterization of localized rain in Metro Manila was presented, which might contribute to other YMC IOPs and vice versa. During the latter half of afternoon session, breakout sessions have been organized. Based on participants interests and requirements, three topics were assigned; 1) coordination of the coming IOP around Indonesia, 2) the same but of the IOP in the Philippines region, and 3) other future coordination including modeling comparison.

On the workshop last day, a plenary session was formed again to review and discuss about three breakout session results. As for the 2019 boreal summer campaigns around the Philippines region, participants from CAMP<sup>2</sup>Ex, PISTON, SALICA, SCSTIMX, PAGASA, and JAMSTEC confirmed the current observation status and plan. Then, they mainly discussed about possible aircraft plan by CAMP<sup>2</sup>Ex. As for the coming IOPs around the Indonesian MC region, participants confirmed the current status of each proposed campaign again. Discussion was mainly devoted to find collaboration with other observations in Indonesia region. For example, currently US-NSF's ELO (Equatorial Line Observation) and US DOE's DIMOP (Diurnal Cycle Interactions with MJO Propagation) projects are still suspended to start due to logistics problems. At this moment, their status is unknown, but if they happen, coordination among all campaigns is crucial. In addition, a possibility of usage of local observation being planned by Indonesian Agencies and JAMSTEC was discussed, as they plan to deploy an X-band radar again in 2019. Compared to the other two breakout session group, the third group confessed that at first they were confused as they did not have an idea what they should discuss, and finally they reached to discuss about any uncertain issues. Its first topic was data management, and they confirmed to complete catalogue for all IOPs and routine observations would be a basis. This point was discussed later at the following data management session. Then, they discussed the future of modeling work, and reached a conclusion that the problem lies in the fact that we do not know what is a missing fundamental component. This group also discussed about influence of research permission on the coming observations. Although no definite answer was provided at this moment, the logistical problems of foreign MSRs conducting research in MC countries must be kept in mind, and may provide impetus of MC countries leading local IOP campaigns themselves.

At the latter half of the morning session and in the afternoon of the third day, participants discussed data management, general concerns, and future direction. YMC adopts open data policy in a timely manner. Currently, BMKG and JAMSTEC are responsible to maintain general observation data sets as the YMC archive sites, while each project and/or participating institutes/universities keep their original data sets on their own. BMKG mentioned that while they open quality-controlled data freely from their site, their original raw data can be shared only based on Memorandum of Understanding or Implementation Agreement. PAGASA also reiterated that open sharing notwithstanding, source of data must still be recognized and acknowledged to come from PAGASA (and respective agencies in other countries) and not just YMC. Then, JAMSTEC introduced their data site, as recently JAMSTEC has started to open their IOP data sets according to the YMC data policy, which requires availability of quality-controlled data within one year after the completion of IOP. By referring their site, participants discussed what are required for the YMC data sharing in addition to the above-mentioned points raised by BMKG and PAGASA. We recognized while uniform format and easy access with some supporting software are desirable, it is difficult and unrealistic with limited resources/fund to do so for data obtained by various IOPs. Hence, while the archive centers try to collect and

distribute data sets from campaign participants, we agreed that a complete field catalogue should be made and shared as a first step. (Note. This point as well as other necessary actions are listed in the following “Action items” section.) Then, participants discussed about a simple question “What is a definition of the YMC period?” We reached a consensus that the current originally designed YMC is a field campaign phase, which consists of various IOPs and contribution from the MC local agencies, and it will end February 2020. Instead, we need the following period as a Phase-2, which enables us to evaluate the improvement of our knowledge on weather-climate systems and modeling skill, to ensure data availability from IOPs and long-term measurement sites, and to conduct future trial based on the legacy of the current activity. Also, we agreed that the phase-2 should be led by the MC countries and interaction among participants must be encouraged. Since it needs more discussion, some directions were indicated. We also discussed a possibility for cross-organization special collection on the YMC-studies for effective information exchange. Finally, a small discussion about the next workshop venue was made. While NTU offered as a candidate, we prepare a space in case others, who do not attend the 4th workshop, want to apply. It will be announced later. Next WS is likely to happen mid-/late 2020.

### **3) Action items**

The followings are required as action items, which were mostly pointed out during the last day plenary discussion session.

- a) Collect all presentation files, which will be shared through the YMC 4th WS website. Presenters should edit accordingly before submission, if necessary. [LOC, all presenters]
- b) If capacity building and/or outreaching activity is done, report it to JAMSTEC(\*), so that such activities can be introduced through the YMC website. [All, JAMSTEC]
- c) International YMC community is encouraged to act for capacity building. For example, UP students may contact “you”, as they need a thesis reader. Respond positively. [All]
- d) Contact MC agencies to collect operational basic (=surface meteorology, radiosonde, and radar) observation data. [JAMSTEC, WS participants from MC agencies]
- e) Send project URL and/or overview description to JAMSTEC. [IOP PIs]
- f) Update IOP progress from IOP PIs to JAMSTEC and BMKG, who host YMC websites.
- g) JAMSTEC will send a form, which indicates items to be filled in to make a complete field catalogue, to the IOP PIs. [JAMSTEC, all PIs]
- h) Contact respective society (AMS, AGU, RMS, MSJ) to ask a possibility of cross-organization special collection. [Chidong Zhang, Eric Maloney, Nick Klingaman, Kunio Yoneyama]
- i) To decide the next venue, applicant notifies his/her will to JAMSTEC by the end of April 2019. NTU has already offered (so no need to notify again). [Anyone]

\* ... Send email to “ymc-joffice [at] jamstec.go.jp”.

### **4) Concluding remarks**

This workshop was held in the mid-period of YMC campaign phase. Thus, while some IOPs had been done and preliminary results could be shared, some are still under coordination and spending hard time for negotiation. Thus, presentations and discussion covers various topics and levels, as shown above. Nevertheless, we could have a very productive and enjoyable workshop. Those are mostly owing to tremendous effort by local hosts (UP, PAGASA, and MO). We’d like to express our sincere thanks to them as well as all participants.

## Appendix - A

### The fourth International Science and Planning Workshop on the YMC

#### Agenda

**Date :** Tuesday, February 26 - Thursday, February 28, 2019

**Venue :**

Institute of Environmental Science and Meteorology  
University of the Philippines - Diliman  
P. Velasquez Street, UP Campas Diliman,  
Quezon City, Philippines 1101

**Local Organizing Committee :**

Olivia Cabrera (UP) ... Chair  
Cesar Villanoy (UP)  
Esperanza O. Cayanan (PAGASA)  
Faye Cruz (MO-AdMU)  
Gemma Narisma (MO-AdMU)

**Purposes :**

- a) Review of preliminary results and relevant science topics
- b) Coordination of the coming Intensive Observation Periods
- c) Discussion about data management and future direction

**Disclaimer :**

This workshop was designed to discuss for science purposes only. All toponyms or geographical nomenclature found in the presentation files are solely the view of the authors and do not necessarily represent that of all workshop participants nor the YMC community.

**Program :**

***Day-1: Tuesday, February 26***

- 08:30 - 09:00 Registration
- 09:00 - 09:20 Opening Remarks
- 09:20 - 09:35 Review of progress since the 3rd workshop
- 09:35 - 10:00 Photo Session & Break
- 10:00 - 12:00 Session-1 Review of Intensive Observation Periods (IOPs):  
Completed, ongoing and preliminary results (1)
- 12:00 - 13:30 Lunch
- 13:30 - 15:30 Session-2 Review of IOPs (2)
- 15:30 - 16:00 Coffee Break
- 16:00 - 17:30 Session-3 Modeling and Relevant Studies (1)

***Day-2: Wednesday, February 27***

09:00 - 10:20 Session-4 Modeling and Relevant Studies (2)  
10:20 - 10:40 Break  
10:40 - 12:00 Session-5 Modeling and Relevant Studies (3)  
12:00 - 13:30 Lunch  
13:30 - 15:30 Session-6 Future IOPs  
15:30 - 16:00 Lunch  
16:00 - 17:30 Session-7 Breakout Session  
    Topic-1 Coordination of Philippines region IOPs  
    Topic-2 Coordination of Indonesian region IOPs  
    Topic-3 Future collaboration of modeling and analyses

***Day-3: Thursday, February 28***

09:00 - 10:20 Session-8 Reporting per breakout session  
10:20 - 10:40 Break  
10:40 - 12:00 Session-9 Data Management  
12:00 - 13:30 Lunch  
13:30 - 14:30 Session-10 Plenary Discussion  
14:30 Adjourn

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## Appendix - B

### Participants

1. Ming Feng (CSIRO)
2. Todd Lane (University of Melbourne)
3. Alain Protat (BoM)
4. Matthew Wheeler (BoM)
5. Erwin Makmur (BMKG)
6. Najib Habibie (BMKG)
7. Rezky Yunita (BMKG)
8. Urip Haryoko (BMKG)
9. Masaki Katsumata (JAMSTEC)
10. Ayako Seiki (JAMSTEC)
11. Ryuichi Shirooka (JAMSTEC)
12. PeimingWu (JAMSTEC)
13. Satoru Yokoi (JAMSTEC)
14. Kunio Yoneyama (JAMSTEC)
15. Min Ho Kwon (KIOST)
16. Jae Hak Lee (KIOST)
17. Anurag Dipankar (MSS/CCRS)
18. Po-Hsiung Lin (NTU)
19. Chung-Hsiung Sui (NTU)
20. Yu-Heng Tseng (NTU)
21. Yiing Jang Yang (NTU)
22. Ronald Macatanagy (NARIT)
23. Paul Barrett (UK Met Office)
24. Nicholas Klingaman (University of Reading)
25. Shuyi S. Chen (University of Washington)
26. Sue Chen (NRL-Monterey)
27. Eric Maloney (Colorado State University)
28. Zhaoxia Pu (University of Utah)
29. Jeff Reid (NRL-Monterey)
30. Chidong Zhang (NOAA/PMEL)
  
31. Olivia Cabrera (IESM-University of the Philippines)
32. Arra Canare (IESM-University of the Philippines)
33. Diana Calde (IESM-University of the Philippines)
34. Alyssa Dawn Castillo (IESM-University of the Philippines)
35. Angelyn General (IESM-University of the Philippines)
36. Sheila Navarro (IESM-University of the Philippines)
37. Macky Villa (IESM-University of the Philippines)
38. Noel Bangquiao (IESM-University of the Philippines)
39. Ryan Diocampo (IESM-University of the Philippines)
40. Charlie Andan (IESM-University of the Philippines)
41. Jhunace Planea (IESM-University of the Philippines)
42. Reimier Gamis (IESM-University of the Philippines)
43. Sherillyn Linda (IESM-University of the Philippines)

44. Paul Daniel Ang (IESM-University of the Philippines)
45. Xyrene Freda Angeles (IESM-University of the Philippines)
46. Karen Apoloan (IESM-University of the Philippines)
47. Ana Marie Garnica (IESM-University of the Philippines)
48. Jobelle Labrador (IESM-University of the Philippines)
49. Archie Castillo (IESM-University of the Philippines)
50. Mylene Cayetano ((IESM-University of the Philippines)
51. Gay Perez (IESM-University of the Philippines)
52. Lemnuel Aragonés (IESM-University of the Philippines)
53. Cesar Villanoy (MSI-University of the Philippines)
54. Leilani Solera (MSI-University of the Philippines)
55. Charina Repollo (MSI-University of the Philippines)
56. Jeffrey Maloles (MSI-University of the Philippines)
57. Socorro Rodrigo (MSI-University of the Philippines)
58. Esperanza Cayanan (PAGASA)
59. Ariel Rojas (PAGASA)
60. Jimmy Corong (PAGASA)
61. Bhenjamin Ona (PAGASA)
62. Erica Bañares (Manila Observatory)
63. Obiminda Cambaliza (Manila Observatory)
64. Faye Cruz (Manila Observatory)
65. James Simpas (Manila Observatory)
66. Melliza Cruz (Manila Observatory)
67. Angela Magnaye (Manila Observatory)
68. Kevin Henson (Manila Observatory)
69. Gene Alec Sunga (Department of Foreign Affairs)
70. Melanie Castillo (Department of Foreign Affairs)
71. Christopher Madrigal (National Coast Watch Center)