

**SUMMARY OF TYPHOON COMMITTEE ROVING SEMINAR 2018
(Singapore, 20-22 November 2018)**

I. Organization

1. The Typhoon Committee Roving Seminar (TCRS) 2018 with the theme on “Application of Remote Sensing Technologies” was successfully held on 20-22 November 2018 in Singapore. It was organized by ESCAP/WMO Typhoon Committee (TC) and hosted by the Meteorological Service Singapore (MSS) of Singapore.
2. The Seminar was attended by 12 participants from Cambodia (2); Hong Kong, China (1); Lao PDR (1); Macao, China (1); Malaysia (2); Philippines (1); Singapore (2) and Thailand (2). Three resource persons came from China, Hong Kong and Japan and two representatives came from Typhoon Committee Secretariat (TCS). The list of participants is given in Attachment A.

II. Opening

1. The TCRS 2018 was officiated by Meteorologist of TCS, Mr. Fong Chi Kong. He expressed his gratitude to MSS for hosting the Roving Seminar as it was one of the main activities of the TC which has been coordinated by the TRCG since 2003. He also expressed his gratitude to the resource persons for sharing valuable experience in remote sensing technologies among TC Members. As technologies advance social and economic loss due to tropical cyclones in TC region can be reduced.

III. Seminar Programme

1. Mr. Koji Yamashita from Japan Meteorological Agency and Dr. Xiang Fang from China Meteorological Administration presented Topic A on “Advances in Satellite Missions and Product Applications in the Typhoon Committee Region”.
2. Dr. Xiang Fang also presented Topic B on “Tropical Cyclone Analysis using Microwave Satellite Imagery”.
3. Mr. Ray Kong from Hong Kong Observatory presented Topic C on “Radar applications in Tropical Cyclone and Extreme Weather Monitoring and Nowcasting”.
4. A technical visit to Central Forecast Office of Meteorological Service Singapore was conducted in the afternoon of 22 November 2018.
5. The Roving Seminar Programme is given in Attachment B.

IV. Proposals and Recommendations

1. The participants gave a warm appreciation to the three resource persons for their presentations and useful advice on the relevant topics.
2. During the wrap up discussion, most participants indicated that they gained knowledge on

the latest remote sensing technologies and expressed interest to apply the technologies in daily operations. The resource persons encouraged the participants to discuss with them for future assistance and collaboration. The Feedbacks and recommendations collated from the participants are summarized in Attachment C.

3. Suggestions from the resource persons and organizers for future reference:
 - (a) more communication and cooperation between satellite operators and users;
 - (b) more focus on the applications of remote sensing technologies;
 - (c) combination of GEO/LEO satellites and radar products.

V. Closing

1. The resource persons and participants expressed their gratitude to MSS for hosting this seminar and for the warm hospitality.
2. Ms. Yap Chui Wah of MSS presented the attendance certificates to the participants.
3. The Roving Seminar closed on 22 November 2018.

**List of Participants of the Typhoon Committee Roving Seminar 2018
(Singapore, 20-22 November 2018)**

Members	Name of Participants
Cambodia	Mr. CHUON Sokun
Hong Kong, China	Mr. PHAN Sambath
Lao PDR	Mr. CHOY Shui-chung
Macao, China	Mr. Phapasit KHAMPHOUMY
Malaysia	Mr. Hong Kei MUI
Philippines	Mr. Mohd Hafizi MAT YASIN
Singapore	Ir. Rajaselvam s/o GOVINDARAJU
Thailand	Ms. Alexis R. RUIVIVAR
	Ms. HUAN Jia Yan
	Mr. NG Jin Zheng
	Dr. Kamol Promasakha na SAKOLNAKHON
	Miss Ornnicha PHANTHURAT
Resource persons	Dr. Xiang FANG
	Mr. Ray, Wai KONG
	Mr. Koji YAMASHITA
TCS	Mr. Chi Kong FONG
	Ms. Yeji SHIN

Typhoon Committee Roving Seminar 2018 Provisional Programme

Dates and Venue: 20 – 22 November 2018, Centre for Climate Research Singapore, Singapore

Main Theme: Application of Remote Sensing Technologies

Topic A – Advances in satellite missions and product applications in the Typhoon Committee region

Himawari satellite system–Mr. Koji YAMASHITA, Meteorological Satellite Center, Japan Meteorological Agency, Japan

Fengyun satellite system–Dr Xiang FANG, National Satellite Meteorological Center, China Meteorological Administration, China

Topic B – Tropical cyclone analysis using microwave satellite imagery

Dr Xiang FANG, National Satellite Meteorological Center, China Meteorological Administration, China

Topic C – Radar applications in tropical cyclone and extreme weather monitoring and nowcasting

Mr Ray KONG, Hong Kong Observatory, Hong Kong, China

Seminar Schedule:

		Day 1 (20 Nov, Tue)	Day 2 (21 Nov, Wed)	Day 3 (22 Nov, Thu)
A M	0900 – 1030	Registration & Opening Ceremony (0900 – 1000)	Lecture Topic A (Himawari – Part II)	Lecture Topic C (Part II)
	1030 – 1100	Tea Break (1000 – 1030 on Day 1)		
	1100 – 1200	Experience Sharing by Member Representatives ^(a) (1030 – 1200)	Lecture Topic A (Fengyun – Part II)	Wrap-up Discussion
Lunch Break (1200 – 1330)				
P M	1330 – 1500	Lecture Topic A (Himawari – Part I)	Lecture Topic C (Part I)	Technical Visit (Central Forecast Office of Meteorological Service Singapore)
	1500 – 1530	Tea Break		
	1530 – 1700	Lecture Topic A (Fengyun – Part I)	Lecture Topic B (1530-1730)	

(a) One of the participants from each Member will be invited to represent his/her weather services to deliver a 10 to 15 minutes presentation regarding the application of remote sensing technologies of his/her Service.

TRCG ACTIVITIES EVALUATION FORM

Roving Seminar 2018
(Singapore, 20 – 22 Nov 2018)

**15 responses (out of 12 participants + 3 lecturers)
(not all questions answered by responders)**

Part A: Event Logistics

*Expectation levels as indicated
number of responders*

(P = participants; R = resource persons)

	Below expectation ☹		Met expectation ☺		Exceeded expectation ☺	
	P	R	P	R	P	R
1. Overall administration/organization	0	0	3	0	9	3
2. Pre-event arrangement and liaison	0	0	1	0	9	3
3. Venue facilities	0	0	1	0	11	3
4. Informative announcements and instructions	0	0	2	0	10	3
5. Travel arrangements	0	0	1	0	9	3
6. Funding arrangements	0	0	3	0	7	3
7. Accommodation	0	0	4	1	6	2
8. Refreshments	0	0	4	0	8	3
9. Social events and visitors' information	0	0	8	0	3	3
10. Helpfulness and friendliness of organizers	0	0	0	0	12	3

Specific points for improvement, if any:

Make it longer, more harder training

Hands on activity

After seminar social activities/programmes

Dinner location together

Tourist spot visit for all

Can improve the coordination in getting the lunch ready

Wireless@sg was a little inconvenient for foreigners

Refreshments could also be improved

Part B: Technical Contents (from participants only)

	A – Lectures by Mr. Koji YAMASHITA	B – Lectures by Dr. Xiang FANG	C – Lectures by Mr. Ray KONG
Interest in Topic (1 to 5 ; from disinterested to most interested)			
Topic Contents (1 to 5 ; from irrelevant to topic to most relevant)			
Topic Organization (1 to 5 ; from loosely structured to well-structured)			
Lecture/Workshop Presentation (1 to 5 ; from poor to excellent)			
Training or Practical Material (1 to 5 ; from ill-prepared to well-prepared)			
Language (1 to 5 ; from hard to understand to easy to follow)			
Effectiveness (1 to 5 ; from little understanding gained to much understanding gained)			

Objectives and Scope (L = too narrow; M = just right; R = too wide)			
Emphasis (L = too theoretical; M = just right; R = too practical)			
Length (L = too short; M = just right; R = too long)			
Technical level (L = too elementary; M = just right; R = too difficult)			

Part C: Follow-ups

1. (For Lecturers) Any views on considerations in selecting future lecturers and participants?

- Suggest to invite more participants

2. What operational benefits (new ideas, skills or methodology) you think would be gained from your experience in the event?

- Many techniques to classify cloud types for satellites and many techniques for more accurate rain forecast
- New ideas in extreme weather monitoring, such as radar-derived wind products to look for convergence/divergence
- Get to know about more new information & products usage about remote sensing, which is useful for application in forecast work
- Integrated data to use
- More technical knowledge
- More ways of microwave satellite images for TC analysis
- Radar data interpretation
- Skills and methodologies in monitoring area forecasting may need satellite/radar technology
- Lots of experience gain can do a lot of think from satellite and radar can explore more

3. Any foreseeable opportunity for operational implementation of the above benefits?

Answer: Yes, benefits likely to be felt in about

(a) a couple of years or less	7
(b) in 2 – 5 years	3
(c) in 5 years or more	1
(d) no foreseeable opportunity	1

4. (For Lecturers) Any views on future topics that may generally help to improve Members' capacity in remote sensing technologies?

- More communication and cooperation between satellite operators and users
- The lecture could focus more on the applications of remote sensing technologies

5. (For Lecturers) Any specific suggestions, assuming you have the opportunity to visit local forecasting offices, for host Member to enhance its capacity in remote sensing technologies?

- Using for combining the products (GEO/LEO satellites and radar etc.)



The participants of the Roving Seminar taking a group photo at the Centre for Climate Research Singapore with the resource persons and representatives from Typhoon Committee Secretariat.