SWFDP – Southeast Asia (SeA)
Regional Training Workshop on
Severe Weather Forecasting (GDPFS) and Warning Services (PWS)

Hong Kong China, 4 – 15 July 2011

Provisional Programme for GDPFS session
1st week, 4 – 9 July 2011
V 15.VI.2011

Monday 4 July	
08:30 – 09:00	**Registration**
09:00	**Opening - welcome and remarks** (*LS Lee*/*Chen*)
	Introduction (subject matter, objectives, workshop programme, concepts).
	o Training Workshop goals/objectives, programme (*Lee*/*Chen*) *20 min*
	o Introduction to NWP/EPS in Operational Weather Forecasting
	− *general aspects, medium-range* (*Persson*) *30 min*
	− *regional and local aspects, short-range, nowcasting* (*HKO*) *30 min*
	o Local arrangements and information (*Lee*) *10 min*
11:00	**Severe Weather Forecasting Demonstration Project (SWFDP)**
	o Overview of the SWFDP (*Chen*) *30 min*
	o SWFDP-SeA Website and portal (*Vo Van Hoa*) *30 min*
	o Discussion: How will "SWFDP-SeA" be useful? *(all, led by Chen)* *15 min*
	Detailed review of the programme for week-1 (*Lee*) *15 min*
12:30 – 14:00	**LUNCH**
14:00	**Current weather discussion** (*HKO*) *10 min*
	Verification
	o Why Verify? Work assignment *(Jones)* *45 min*
	Global NWP models and selected products for Southeast Asia
	o Numerical Weather Prediction Process *(Persson)* *45 min*
	▪ Basics: data assimilation, resolution, physical parameterisation;
	▪ Strengths and weaknesses of global models;
	o JMA Global Models – *(JMA)* *30 min*
	▪ Overview, strengths, weaknesses, products, demo
	▪ Deterministic and EPS products
	o ECMWF model products available to WMO – (*Chen/Persson*) *15 min*
	▪ access, products, surf
– 17:00	o Forecasting at the Severe Weather Prediction Center, CMA – (*CMA*) *30 min*

Tuesday 5 July	
09:00 –	**Probabilistic Forecasting and Ensemble Prediction Systems products**
	o General probability concepts for weather forecasting *(Persson)* *45 min*
	o Probability charts, EPSgrams *(Persson)* *45 min*
	Regional NWP/Limited Area Model (LAM)
	o HRM Limited Area Model – products, strengths and weaknesses *(Vo Van Hoa)* *30 min*
	o Tropical Cyclone NWP guidance *(JMA)* *30 min*
	o RA II City-Specific forecasts project (*HKO*) – *30 min*

12:30 – 14:00	LUNCH

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Current weather discussion *(HKO) 10 min*

Probabilistic Forecasting and Ensemble Prediction Systems products (cont'd from morning)
  - ECMWF Extreme Forecast Index (EFI) and its use *(Persson) 45 min*

Use of Probabilistic Predictions

  - Probabilistic forecasting at JMA, use of GIFS-TIGGE products *(JMA) 60 min*
  - Using NWP "deterministic" with EPS products *(Persson) 30 min*

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Review/Self-study *(45 min)*

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Wednesday 6 July

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Application of NWP products to severe weather forecasting (medium- to short-range)

  - Using NWP and EPS products *(HKO, CMA) 45 min*
    - Using NWP and other weather information for forecasting severe weather;
    - Quantitative Precipitation Forecasts (QPF);
  - Diagnosis of deep convection: K-Index, Total Totals Index, Lifted Index, Vertical Velocity, CAPE, Precipitable water, Theta-e, CIN *(CMA) 45 min*
  - Detecting and monitoring hazardous weather *(Lao PDR, Viet Nam) 45 min*
    - Severe weather of the region, seasons, physical climatology
    - Real-time observations
    - Using NWP Guidance for forecasting severe weather

Verification
  - Introduction to verifying forecasts and warnings *(Jones) 45 min*

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12:30 – 14:00	LUNCH

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Current weather discussion *(HKO) 10 min*

  - Verification tasks and interpretation of results *(Jones) 45 min*

Using NWP/EPS products *(Persson, Chen) 45 min*
  - Review of various current products
  - How to consolidate NWP guidance in forecasting? (discussion)

Review/Self-study *(60 min)*

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Medium-range Forecasting for this weekend and next week *(Persson) 30 min*

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Thursday 7 July

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Severe weather - Case study presentation
  - Introduction: Forecasting process for severe weather at HKO *(HKO) 30 min*

  - Hands-on demo/work session *(led by HKO) 60 min*
    Case study work – Use of NWP and EPS products, observational data for monitoring and forecasting severe weather in Southeast Asia, to provide early alerts and warnings

Tour of HKO Forecasting Centre *(HKO) 30 min*

Case study work *(all, led by HKO) 60 min*
  - Reports on the case study *(participants)*

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12:30 – 14:00	LUNCH

– 17:00	**Current weather discussion** (*HKO*) *10 min*
	
	Nowcasting Severe Weather (*HKO*) *30 min*
	   o Use of observations: reports, radars, satellites, lightning detection
	   o Short-range forecasting, warning services, and verification
	
	Nowcasting using MTSAT products (*JMA*) *60 min*
	
	   o Introduction to MTSAT products, and use for Nowcasting
	   o Examples or case study of monitoring severe weather
	
	Medium-range Forecasting for this weekend and next week
	   o Prepare forecasts *(participants)* *45 min*
	   o Discussion *(all participants, led by Persson) 15 min*

Friday 8 July

9:00 –	**Presentations by participants** (*participants, 120 min*)
	(topics, related to weather forecasting in respective countries, e.g. case studies, forecasting challenges, weather warning programme, forecast verification)
	   o Cambodia *15 min*
	   o Lao PDR *15 min*
	   o Thailand *15 min*
	   o Viet Nam *15 min*
	   o *RSMC Tokyo, 20 min*
	   o *SWPC, CMA, 20 min*
	
	Verification
	   o Review of verification and assignment results *(Jones) 60 min*

12:30 – 14:00	LUNCH

– 17:00	**Short-range and nowcasting, using current weather situation in Southeast Asia**
	   o Introduction: current synoptic situation (*HKO*) *15 min*
	   o Hands-on demo/work session *(all, led by HKO) 45 min*
	      Case study work – Use of NWP and EPS products, observational data for monitoring and forecasting severe weather in Southeast Asia, to provide early alerts and warnings
	
	Case study work *(all, led by HKO) 60 min*
	   o Reports on the case study *(participants) 10 min (each)*
	
	Weather outlook for next week (11-15 July) *(preparation and discussion, participants) 30 min*

Saturday 9 July

9:00 –	**Implementing in the Region the Severe Weather Demonstration Project** o Draft Implementation Plan, management, schedule feed-back. and organization *(Chen)* **Discussion** *(All)* Panel with all the lecturers – Exchanges, discussion, conclusions and recommendations Complete WMO Training Workshop (GDPFS) Questionnaire **Closing remarks** *(Lee/Chen)*
13:00	CLOSURE

Course Director and lecturer: L.S. Lee (HKO, Hong Kong China)
WMO Secretariat: Peter Chen
Invited lecturer: Anders Persson, WMO expert consultant
Invited lecturer(s): Hong Kong Observatory (Hong Kong China)
Invited lecturer: Richard Jones, WMO expert consultant
Invited lecturer: RSMC Tokyo/JMA (Japan)
Invited lecturer: Severe Weather Prediction Centre, CMA (China)
Invited lecturer: Vo Van Hoa, Viet Nam
Participants (forecasters): Cambodia, Lao PDR, Thailand, Viet Nam

Notes:
Daily session:
Mon. - Fri.: 9:00 am – 5:00 pm (8:30 am start of registration on Monday 4 July 2011);
Sat.: 9:00 am – 1:00 pm

Health breaks: 15 minutes mid-morning, mid-afternoon

Current weather discussion:
Beginning of each afternoon session, except Friday (10 min; HKO)