

**First Organizing Committee Meeting**  
**Experiment of Typhoon Intensity Change in Coastal Area**  
**(EXOTICA)**  
9 October 2015  
Shanghai Meteorological Service  
Shanghai, China

FOR PARTICIPANTS ONLY  
OC.1/5  
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ENGLISH ONLY

## **The near future work plans for project EXOTICA**

***(draft)***

### **ACTION PROPOSED:**

#### **The Organizing Committee is invited:**

- (a) To endorse the near future work plans for project EXOTICA.

# **The near future work plans for project EXOTICA**

## **1. Until the 48<sup>th</sup> TC Session**

### **1.1 Field campaign**

To pilot the synergized target typhoon field campaign in Hainan island region, by rocket dropsonde and mobile radiosonde on CMA side, and the reconnaissance flights on HKO side.

### **1.2 Preliminary analysis**

To conduct preliminary analysis of observation data quality control and the target typhoon boundary layer wind field structural feature.

### **1.3 Project management**

To prepare the proposal of 2016 implementation plans and schedule, and will be discussed during the coming 10<sup>th</sup> IWS.

To hold the 1<sup>st</sup> joint workshop on typhoon landfalling and intensity change, with WMO-TLFDP, in December 2015 in Shanghai.

To prepare the project progress report and submit to 48<sup>th</sup> TC Session.

## **2. Plans of 2016 typhoon season**

### **2.1 Project management**

To hold the 1<sup>st</sup> workshop and SSC meeting on project EXOTICA in April (or May) 2016.

To prepare the progress report and proposal plans of 2017, and submit to 49<sup>th</sup> TC Session.

### **2.2 Field campaign**

According to the experiment scheme, the field campaign will be carried out on offshore and land-falling typhoons in the South China Sea and East China Sea offshore regions to obtain observation data of structure and intensity changes of one or two target typhoons. The major novel observation devices planned to be used are as follows:

**a. Manned aircraft:** reconnaissance (search and rescue) flights of the Hong Kong Observatory can be used for direct fly-by observation of target typhoons over the South China Sea region.

**b. Mobile radio-sonde:** the "mobile observation vehicles" (equipped with mobile GPS sounding and other instruments) of STI/CMA and Institute of Tropical and Marine Meteorology (ITMM/CMA) can be used respectively for wind-chasing observation of land-falling typhoons in the Eastern and Southern China coastal areas.

**c. Buoy array:** Buoy array established successfully by the STI/CMA in collaboration with the oceanic administrations in 2014 in the South China Sea, will be used in continued observation of air-sea flux features under typhoon conditions.

**d. Rocket drop-sonde:** Improved rocket dropsondes developed by the Shanghai Typhoon Institute in collaboration with relevant agencies will be put to test on typhoons in the South China Sea (near Wanning, Hainan) and East China Sea (near Ningbo, Zhejiang). But, it depends on the funding.

In addition, observation devices installed within and in the periphery of the field observation base in Maoming, Guangdong and one under construction in Sansha, Fujian (including microwave radiometers, wind profiler radars, Raindrop, ultrasonic anemometers, gradient observation towers, etc.) can be used for fixed observation of land-falling typhoons.

In collaboration with relevant agencies, STI plans to develop and equipped the unmanned aerial vehicle (UAV) system. The small and low-altitude UAV will be used for low-altitude observation of the boundary layer of the offshore typhoons (outside the 10 Beaufort scale wind radii) in the South China Sea and East China Sea regions, and the middle and high-altitude one will be used for high-altitude (more than 10km) observation experiment.

### **2.3 Demonstration application**

Focus on the hot topic of genesis/disappear and rapid change (including RI and RW), preliminary research on quality control and processing of field campaign data of target typhoon, try to understating the key scientific issue on changes in the structural features of typhoon boundary layer wind field, by case study to lay a sound basis for comprehensive typhoon field campaign data demonstration application, adjustment and improvement on integrated observation schemes, as well as follow-up studies of the project, collaboration with WMO-TLFDP.

**a. Case study:** using the field campaign data on target typhoon, the dynamic analysis and modeling will be studied case by case by RGF and RGM respectively.

**b. Vertical structure analysis:** based on field campaign data on target typhoon, to verify and modify the profile data inversion from satellite and radar data.

**c. Conversion relationship:** try to modify the conversion relationship of wind speed among 1min, 2min and 10min, between detection altitude and 10m.