- **An Introduction of SoWMEX-2009** (NTU-DAS Newsletter)

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Taiwan meteorological community is going to conduct a joint field experiment during the Mei-Yu season of 2009 at the western plain and mountain slope region of central and southern Taiwan. It is a continuation of SoWMEX/TiMREX 2008. The goal of the program is to improve the capability of quantitative precipitation estimation and forecasting (QPE/QPF) during the Asian Summer Monsoon season especially over the complex terrain regions. The localized heavy rainfall events frequently lead to floods and landslides resulted in casualty and heavy property damage in the Taiwan area. SoWMEX program provides a unique opportunity to advance our basic understanding of physical processes leading to development of heavy orographic precipitation through intensive field observation campaign.

The primary observational facilities to be deployed at central and southern Taiwan include: TEAM-Radar (X-band mobile polarimetric Doppler radar system) from NCU, 2 sets of soil moisture and flux measurement systems from TTFRI, and GPS sounding system from CCU. CWB will provide upstream soundings by conducting airborne dropsondes over the Taiwan Strait and the northern boundary of South China Sea.

The Special Observing Period (SOP) operation phase of SoWMEX-2009 is from May 20 to June 20, 2009. IOP will be conducted whenever there is a possibility of severe weather. Dropsonde operation will be the major facility at this period. A continuous 14-day enhanced observing period (EOP) from June 3 to June 16 is scheduled. In this period, some of the ground based sounding sites will launch 4 sondes per day. Rain measurement and surface processes will be conducted through enhanced observations of surface fluxes of sensible heat and latent heat. Soil moisture will be observed at the same time. 940MHz wind profiler will be deployed at the same location for low-level wind observation. This "supersite" will be set up at Chiayi of CWB station. Real-time dual-Doppler wind synthesis will be tried out during the operation phase. It will provide important information to local wind distribution and to help storm forecast.

Major scientific objectives of SoWMEX-2009 are similar to that of

SoWMEX/TiMREX-2008 and the surface fluxes measurement and real-time dual-Doppler wind synthesis will be emphasized. It is anticipated that these intensive observing data set will advance the basic understanding of the heavy rain weather systems and provide an opportunity to produce better rainfall prediction products. In addition, there is high possibility that China Fujian Weather Bureau will provide 4 sondes per days at four sites in the Fujian province. This information should be helpful to model data assimilation to Meiyu frontal systems.

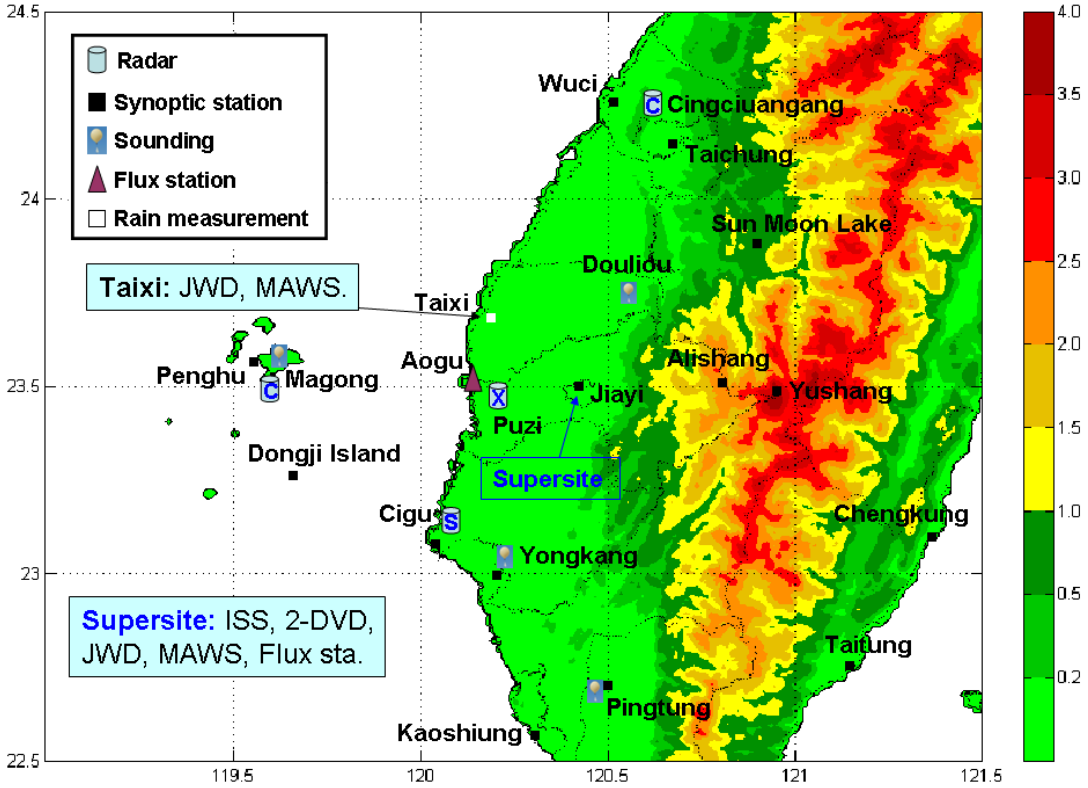
There are several US scientists will participate the field phase of the experiment: Jim Wilson, NCAR; Jim Bresch, NCAR; Wen-Chau Lee, NCAR and Paul Ciesielski, CSU.

- **Observational information**

The EOP of SoWMEX 2009 has begun at 00 Z, 06/03 and been expected to continue till 00 Z, 06/16. Here gives the observational component information of all additional sites below:

Additional sites information (for research):

1. Super site (at CWB Jiayi conventional station): ISS, 2-DVD, JWD, MAWS, Flux station.
2. Rain measurement (at Shangde elementary school, Taixi, Yunlin County): JWD, MAWS.
3. Additional sounding site (at Xizhou elementary school, Douliou, Yunlin County): Upsonde, MAWS. (Four times a day launch during EOP)
4. Truck based mobile radar (at Puzi river embankment, Jiayi County): TEAM-R (C-Pol), MAWS.
5. Flux measurement (except for the one at super site, the other one is set at Augo farm, Jiayi County).


Radar
Synoptic station
Sounding
Flux station
Rain measurement
Taixi: JWD, MAWS.
Supersite: ISS, 2-DVD, JWD, MAWS, Flux sta.
Wuci
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