

## **The Status of QPESUMS System in Central Weather Bureau, Taiwan**

TAI-KUANG CHIOU<sup>1</sup>, CHIA-RONG CHEN<sup>1</sup>, PRO-LIANG CHANG<sup>1</sup>

<sup>1</sup>*Meteorological Satellite Center, Central Weather Bureau, Taiwan*

Torrential rainfall (and the ensuing flash flood) is one of the major natural disasters in Taiwan. Not only human lives and personal property were severely demolished, but also the societal stability and sustainability were greatly threatened. The QPESUMS (Quantitative Precipitation Estimation-Segregation Using Multiple Sensor) system was operational in late 2002 and has been under functional improvement with the goals of making reasonable QPE/QPF applicable to flash flood warning and water resources managements. . The QPESUMS system incorporates data from multiple sensors, such as multiple radars, numerical models, satellite, lightning and rain gauges. Products of QPESUMS are shown in web-page format for easy access. Presently, real-time products of QPESUMS system include: (1) raingauge-adjusted radar QPE, lightning frequency and satellite QPE for past 1, 3, 6, 24, 72hr, (2) semi-automated typhoon center positioning and tracking info, (3) storm cell detection and 1hr projection, (4) 0-1hr QPF with 10 min update cycle, (5) vertical cross-section of radar echo, and etc. Subsequently, the QPESUMS is able to real-time monitor and analyze severe weather systems approaching Taiwan with 0-1hr QPF product as an important tool. Systematic verification is under way for further improvement of the techniques used in QPESUMS system. A series of tasks is undertaken to advance the usefulness of the QPESUMS on severe weather monitoring and risk mitigation: (1) high-resolution geographical info and real-time hydrological data will be included for aerial QPE/QPF product based on the needs from hazard mitigation agencies, (2) on-line severe weather data archiving and retrieving system for case studies, (3) hazardous weather warning products, (4) dual-polarization radar technique adoption, (5) continuing QPESUMS system outreach to hazard mitigation agencies.