

# Taiwan Area Mesoscale Experiment (TAMEX)

## Abstract

The frequent mesoscale heavy rain and their associated damages over Taiwan in recent years have been seriously concerned by the government and the general public. Therefore, the National Science Council has sponsored a Natural Disaster Prevention Program which consists of several projects studying geophysical, atmospheric and hydraulic phenomena which may cause disasters. The "Taiwan Area Mesoscale Experiment" (TAMEX), is one of the sub-projects and is proposed to study both environmental condition and triggering mechanism for development of mesoscale convective systems at different stages during the Mei-Yu season. Its goal is to promote the weather forecast ability and hence to reduce the losses caused by mesoscale heavy rain.

TAMEX was scheduled to be made in two phases. The first phase was carried out in May and June 1986. It was operated in a limited area covering the watershed of the Tanshui river, Taoyuan and Hsinchu, and only used the existing equipment and facilities. The second phase has been completed in May and June 1987 by employing the more sophisticated facilities such as Doppler radars and airplanes, and its operation area was enlarged to a 500 km x 500 km area surrounding Taiwan. TAMEX is the first well-organized and integrated experiment in the history of our meteorological society.

There were 15 governmental agencies and universities participating in the field phase. These included Central Weather Bureau, CAF Weather Wing, Civil Aeronautical Administration, Water Conservancy Bureau, Bureau of Shimen Dam, Bureau of Tseng-Wen Dam, Taiwan Power Company, Chinese Navy Meteorological Center, Highway Bureau, Institute of Energy and Mineral, Fishing Training Center, CAF Communication and Electronics Institute, National Taiwan University, National Central University, and Chinese Culture University. In addition, There were 10 universities and 3 research institutes from the United States participating the field phase. They are Colorado State University, Florida State University, North Carolina State University, Oklahoma University, Purdue University, St. Louis University, Yale University, University of Alabama, University of Hawaii, University of Washington, National Center for Atmospheric Research, Naval Research Laboratory, and National Oceanographic and Atmospheric Administration.

The TAMEX field phase started on May 1 and ended on June 30, 1987. There were a total of 13 IOP's and 10 flight missions completed. Based on the Operations Plan, tremendous amount of data were collected. These data will be very valuable to both the basic research and applied research as well as the forecast technique development. Overall, TAMEX is a well-planned, well organized, and well-carried out large-scale scientific experiment.