

MESOSCALE STRUCTURE OF CONVECTIVE WEATHER SYSTEMS OBSERVED
DURING THE SOUTH CHINA SEA MONSOON EXPERIMENT (SCSMEX): A
PRELIMINARY SURVEY

Keenan, T.D.,

Bureau of Meteorology Research Centre (BMRC), PO Box 1289K GPO Melbourne 3001
Australia

Wang, J-T., Lin , P-L., Chen, T-C. and Liou, Y-C.,
National Central University (NCU), Chung-Li, Taiwan 320.
Kankiewicz, J. A. Colorado State University, CO 80523.

The goal of SCSMEX was to better understand the onset, maintenance and variability of the monsoon in southeast Asia and the western Pacific. As part of this program an Intensive Flux Array (IFA) was established in the northern South China Sea within the SCSMEX observing network to measure hydrologic processes and investigate the mesoscale evolution of precipitation systems. The IFA measurement platforms included the BMRC dual-Polarimetric Doppler radar and the NCU Integrated Sounding System located on Dongsha Is (20°N 43'E 116° 43'E), the Tropical Ocean Global Atmosphere radar and soundings on the People's Republic of China (PRC) Shiyan #3 located 45 km southeast of Dongsha Is, an Atlas mooring, aerosonde operations and standard meteorological surface observations including disdrometer measurements. The radar configuration provided a unique dual-Doppler area in a true oceanic environment with lobes extending 80 km east-west and north-south of the radars. Two Intensive Observational Periods were conducted from May 5-May 25 (onset phase) and June 5- June 25 (post onset), 1998.

The experimental period captured the onset of the 1998 summer monsoon through the South China Sea (SCS) during the period 10-20 May. The low-level flow changed from a south easterly direction (subtropical origin) to a south westerly direction with tropical origin during mid-May 98. At this time the Mei-Yu front became established along the southern coast of China. Of particular significance was the convergent area associated with the Mei-Yu front. The subtropical-tropical interaction played a significant role in providing forcing of the weather observed over the northern part of the SCS.

A wide variety of convective systems were observed during the observational periods with a most active period occurring the onset of the monsoon. All observed convection had the "typical" characteristics of