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Characteristics of Local Circulation and Boundary Layer on Ozone Episodes in Southern Taiwan

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A Field Experiment was held in Kou-Hsuang/Ping-Dong area in Southern Taiwan during autumn of 2005 with the goals to understand the atmospheric processes and environment related with ozone pollution episodes. Several instruments viz., radio sounding, tethesonde, pibal, surface Mets, ozone monitors and also a 915 MHz wind profiler operated continuous to obtain good temporal and vertical resolution data.

During three Intensive Observation Periods, wind profiler observation shows that several occasions, sea breeze was onset ∼3 hours after sun raise. Internal boundary layer and convective boundary layer were closely associated with sea breeze development. These characteristics features play an important role both on local environment and ozone concentration.

PSU/NCAR MM5 model utilized to understand the relation between local circulation and ozone pollution. Trajectory calculation shows that local circulations play an important role on the position of ozone concentration.