

THE ROLE OF MESOSCALE CONVERGENCE ON THE LOCALIZED RAINFALL DURING TAMEX IOP 3

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During IOP 3 (22 May 1987), appreciable rainfall was observed along the northwestern coast of Taiwan because of the arrival of four rainbands ahead of the upper-level trough under the prevailing southwesterly monsoon flow. These rainbands formed over the Taiwan Strait in succession with southwest-to-northeast or south-to-north orientation. In the formative stage, these rainbands consisted of isolated convective rain cells. They reached the mature stage off the northwestern coast with a trailing stratiform region behind the leading convective line and decayed as they moved inland.

For these rainbands, long-lived (>1hr) reflectivity maxima formed upstream or on the southern end of the rainband within the convergence zone where the orographically induced southerly flow along the coast converged with the prevailing southwesterlies modified by storm-induced westerlies. The long-lived reflectivity maxima consisted of one or more rain cells. These reflectivity maxima went through their life cycles as they moved from the southwest to northeast along the rainbands. They dissipated on the northeastern flank of the rainbands.

Key words: mesoscale convergence, localized rainfall, TAMEX, rainbands, reflectivity maxima.