

Dropsonde observation of the water vapor front over East China Sea

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Abstract

Dropsonde observations were carried out in 2004 and 2005 over the East China Sea in order to confirm a structure of the water vapor front proposed by Moteki et al. (2004). Two flights for each year were made during the Baiu targeting the area to the south of the Baiu front. Flight pass and timing were decided relying on outputs of the cloud resolving numerical simulation, CReSS (Cloud Resolving Storm Simulator). The relatively dry air from continental China in the low altitude was confirmed to converge with the extremely moist air in the northwestern edge of the Pacific high. The convergence is considered to play an important role in the formation of a linear precipitation system in the south of the Baiu front. This precipitation system along the water vapor front is considered to play an important role for the generation of heavy rainfalls along the west coast of Kyushu, Japan. The role of the moist layer below 1 km ASL over East China Sea should be studied intensively for understanding the formation and maintenance of MCSs over ocean.