

Principal Researcher	Hiroshi Uyeda			Number of Researchers	3	
Research Institution • Department • Title	Professor, Hydrospheric Atmospheric Research Center, Nagoya University			Location of Institution	Nagoya	
Title of Project	Investigation of Development Mechanism of Mesoscale Convective Systems along the Baiu Front over the Ocean					
Abstract of Research Project	<p>Mesoscale convective systems (MCSs) developing in a moist environment such as over the East China Sea are one of the major targets to reveal in meteorology as they develop rapidly and produce heavy rainfalls on west Kyushu. In order to reveal the energy and water budget around the MCSs, observations on the distribution of water vapor are required over the ocean. Present research project aims to clarify the development mechanism of MCSs along the Baiu front over the ocean by the following observations and experiments.</p> <p>1. Develop a system to forecast the best flight pass for the observation of the MCSs by using a cloud resolving numerical model to run and an objective analysis data provided by Japan Meteorological Agency as an initial.</p> <p>2. Aircraft observation measures 1) formation of cold air in the low altitude in the north of the Baiu front, 2) structure of the warm moist air advection in the low altitude in the south of the front, 3) location of MCSs formation, 4) formation of cloud ice in the high altitude in the north of the front, and 5) warm rain process in the south of the front.</p> <p>3. Clarify the development mechanism of MCSs along the Baiu front and the energy and water budget around MCSs over the ocean by analyzing observational data and by numerical simulation with a cloud resolving model.</p>					
References	<p>1. Shinoda, T. and <u>H. Uyeda</u>: Effective factors in the development of deep convective clouds over the west region of eastern China during the summer monsoon season. <i>J. Meteor. Soc. Japan</i>, 80, in press. (2002)</p> <p>2. <u>Uyeda, H.</u>, H. Yamada, J. Horikomi, and et al.: Characteristics of convective clouds observed by a Doppler radar at Naqu on Tibetan Plateau during the GAME-Tibet IOP. <i>J. Meteor. Soc. Japan</i>, 79, 463-474. (2001)</p> <p>3. <u>Uyeda, H.</u>, Y. Asuma, N. Takahashi, and et al.: Doppler radar observations on the structure and characteristics of tropical clouds during TOGA-COARE IOP in Manus, Papua New Guinea: Outline of the observation. <i>J. Meteor. Soc. Japan</i>, 73, 415-426. (1995)</p>					
Term of Project	Fiscal years 2003-2007 . (5years)					
Budget Allocation (in thousand of yen)	FY2003	FY2004	FY2005	FY2006	FY2007	TOTAL
	24,700	21,800	21,800	8,000	4,600	80,900
Homepage Address	http://www.rain.ihas.nagoya-u.ac.jp/index-jpn.html					