Capability of 443MHz Wind Profiling Radar with RASS for Measuring Temperature and Humidity Profile in Okinawa subtropical region

Jun-ichi Furumoto[1]; Shinsuke Satoh[2]; # Toshitaka Tsuda[3]; Yasuhiro Murayama[4]
[1] RISH, Kyoto University; [2] NICT; [3] RISH, Kyoto Univ.; [4] NICT

Measurement of atmospheric temperature and humidity with the excellent temporal resolution is very important to elucidate the mechanism of the severe and short-lifetime atmospheric phenomena such as severe storm and typhoon. Research Institute for Sustainable Humanosphere (RISH), Kyoto University and National Institute of Information and Communications Technology (NICT) collaborate to obtain temperature and humidity profiles with 443 MHz- wind profiling radar (443MHz-WPR) by implementing RASS (Radio Acoustic Sounding System). Since 2007, measurement of virtual temperature with 443MHz-WPR is continuously operated, except for night time by considering the noise pollution to the neighboring village.

In this presentation, we will introduce the technical detail of 443MHz-WPR/RASS system and comparison of RASS temperature with simultaneous radiosonde results. We also discuss the analysis of meso-gamma-scale convective system in July 2007 passed over the Ogimi observatory by using the virtual temperature with RASS, NHM, and COBRA data. The preliminary result of humidity estimation with 443MHz-WPR/RASS will be also introduced in the presentation.