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Atmospheric parameter comparisons at the Tsukuba and Kashima VLBI stations during the CONT05 VLBI campaign

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In September 2005, 15 continuous days of Very Long Baseline Interferometry (VLBI) data were observed in the Continuous VLBI 2005 (CONT05) campaign. The Tsukuba VLBI station of Geographical Survey Institute (GSI) is one of the eleven observatories that participated in the campaign as the only one station in the Asia and Oceania region. The Kashima VLBI station of National Institute of Information and Communications Technology (NICT) also participated in the campaign on September 16, 2005. The one of main concerns of the campaign is to investigate atmospheric effects on the estimated station coordinates. Both Tsukuba and Kashima VLBI stations were co-located with a Global Positioning System (GPS) station and a Water Vapor Radiometer (WVR). Our WVRs were measuring in the zenith direction at each station. At Tsukuba the radiosonde station of Japan Meteorological Agency (JMA) is located about 9 km south from GSI VLBI station. After the campaign our two WVRs were simultaneously operated at Tsukuba for the comparison with the radiosonde data sets. Since Tsukuba and Kashima are located in the Asian monsonn region and the campaign was performed in the summer season of Japan, water vapor content was highly variable during the campaign. The maximum value of zenith wet delay (ZWD) is up to 30 cm. We show that the ZWD from GPS is in good agreement at less than 10 mm level. The ZWD derived by VLBI measurements is under investigation. We will present comparisons of atmospheric parameters obtained by these different techniques. In addition we will compare them also with operational pressure level data from the JMA numerical weather model data.