

Atmospheric water vapor anisotropy around Gifu University obtained by the water vapor radiometer (continued)

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We reported preliminary results for the water vapor anisotropy around Gifu University obtained by one year observations with the water vapor radiometer at the 96th geodesy society meeting in Japan. This paper will report the more extended research, we found 1) continuous anisotropy of about 8% were seen from May to August and the amount of water vapor were large for south direction, 2) In autumn, water vapor anisotropies were small for fine days and were large for bad weather days, the amount of water vapor were also large for south direction, 3) In winter, strong anisotropies up to 15% were seen for fine days and the amount of water vapor were large for south-west direction

Gifu University is located at the northern edge of the Noubi-Plane, then these results strongly suggest that the water vapor anisotropy occurs by the location. Such mountain-plane edge area situations should be seen for many VLBI and GPS stations in Japan. Similar results for ocean-plane area (Mousa, PhD Thesis Kyoto University 1997., Ichikawa et al. VLBI symposium 1999) and a basin area (Tanaka et al., 94th meeting of the Geodetic Society of Japan, 2000) were reported and are thought to be the common problem in Japan.

Excess pass length of the radio waves for zenith is 30cm in summer and 2.5cm in winter, thus the maximum difference of the pass length for 30 degree elevations is 20-30mm in summer and 7mm in winter, systematic errors should occur for VLBI and GPS observations. We will also report of the comparison for GPS data of the GEONET.