

Gradients of water vapor distribution in the atmosphere and wind velocity

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Wet delays observed with water vapor radiometers, WVR1100TM WVR05 and 06 in Uji, Kyoto Prefecture, southwest Japan, show azimuthal differences between north and south directions as well as east and west directions, reaching to 3cm or more in the period of a few days or longer. This will cause positioning errors in observations of transient phenomena such as co-, pre- and post-seismic deformations. Therefore we have investigated the relationship between the observed wet delay gradients and the wind direction and velocity observed at Kyoto Local Meteorological Observatory of Japan Meteorological Agency about 12 km north of the radiometers. It is found that water vapor may be blown downwind and that a calm weather condition under sunshine will generate wet delay gradient in the lowest part of the troposphere.