



## **Retrieval of Water Vapor Slant Delays for Numerical Weather Predictions in Germany**

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Improved knowledge of the water vapor field is very important for a variety of atmospheric research applications and for improving numerical weather forecasts.

During the last years the capacity of deriving the vertical integrated water vapor (IWV) from GPS measurements with the same accuracy as conventional observations (e.g. radiosondes, water vapor radiometers) has been proven. In Germany an operational monitoring of IWV in near real-time is demonstrated since May 2000 using GPS network of 220 sites with an accuracy of about  $\pm 1-2$  mm.

The integrated amount of water vapor in the line of sight to each GPS satellite (called slant IWV) provides additional information on the horizontal structure of the water vapor distribution around a single ground station, which may improve the initial water vapor field of short-range weather forecast.

First results of water vapor slant delay retrieval using the GFZ EPOS software are validated using delays derived from the local model (LM) of the German Weather Service (DWD). Such comparisons may prove the potential of GPS derived slant delays for the detection of rapidly evolving meteorological phenomena, e.g. frontal passages.