

The measurement of the water vapor in the atmosphere using INACORS-BIG, for weather forecasts

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Water vapor is an important component of the earth's climate system. Rain is the condensation of water vapor in atmospheric into drops weight enough water to fall and usually arrive on the mainland. The measurement of water vapor in the atmosphere using GPS is an accurate method, who has done some countries. In Indonesia, research with this method is still relatively new. And held still in the area around the island of Java. As research from Realini et al. (2014) proved that the GPS meteorology technique is useful to investigate severe weather conditions over West Java.

The purpose of this research is to provide estimates of the contents of water vapor in the atmosphere, using GPS stations in Indonesia, is known as INACORS-BIG. In this research also shows the accuracy of the test that compared with meteorological data that has been obtained from BMKG. Therefore, this research needs to be done for the benefit of weather forecasts especially rain. And to test the measurement of water vapor using GPS in Indonesia.

Weather forecast models require three-dimensional temperature, moisture, pressure, and wind data (four dimensional in time). Typically this data is obtained through radiosondes and other techniques. These techniques are often limited spatially and temporally, thus limiting the effectiveness of the forecast models. By better understanding water vapor, as well as the other inputs to the models, more accurate forecast models can be developed and new observational techniques can be investigated.

The GPS techniques discussed here will provide additional atmospheric data to increase vertical resolution in the case of space-based GPS receivers and horizontal resolution in the case of ground-based GPS receivers. With both techniques, the temporal resolution will be greatly improved.

Keywords: INA-CORS, Water Vapor, Weather Forecasts