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Combination of tropospheric NRT Zenith Total Delay Estimates: Quality Control and Validation

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GPS data, coming from regional ground-based GPS networks, are routinely analyzed for Near Real Time applications. Within E-GVAP (http://egvap.dmi.dk), several GPS sites are processed by different analysis centres using different networks, different processing softwares and/or different processing settings. We present a method for combining NRT tropospheric solutions, which is applied routinely to the data stream setup in E-GVAP. This method could also be used to combine atmospheric parameters retrieved from various geodetic techniques (as GPS and VLBI), according to the vision of the IAG project GGOS (Global Geodetic Observing System). It provides, along with a combined NRT ZTD estimate and its standard deviation, site and analysis centre specific bias and weight. The NRT combined tropospheric product will be validated against radiosonde observations, HIRLAM data and other geodetic ZTD solutions. The combination of NRT ZTD solutions is also a good tool for detecting problems in data processing and providing a reliable quality indicator for each contributing solution, which is an essential step when using observations in an operational application.