



Assessment of the uncertainties of near real time estimates of the zenith tropospheric delays by ground GPS network

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Recent developments in Global Positioning System data processing have allowed the estimation of zenith total delay, the delay of the neutral atmosphere or ZTD, with a high degree of accuracy using continuously operating GPS networks. From this delay integrated water vapour can be derived by means of additional meteorological information, in particular observed pressure or numerical weather prediction model pressure. Comparisons with other independent techniques must be performed to evaluate the quality of atmospheric parameters directly estimated or retrieved from the GPS system. In this work we assess the accuracy of GPS atmospheric parameter, namely zenith total delay, delivered in near-real time from an European ground-based network of permanent GPS receivers. NRT GPS solutions are delivered every hour to the European E-GVAP (EUMETNET GPS Water Vapour Programme) with the goal to use them for numerical weather prediction. Comparisons and validation w.r.t independent technique as VLBI and Radiosonde will be provided together with an assessment of the GPS ZTD uncertainties.