



IGS Tide Gauge Benchmark Monitoring Pilot Project

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The International GPS Service (IGS) plays a significant role in promoting, establishing and the densification of a global reference system by GPS. Moreover, coordinates published and distributed by the IGS are used in numerous scientific applications, ranging from plate tectonic studies to atmospheric sounding. In contrast, since the beginning of the GPS era several studies have revealed the uncertainty in the GPS height component. Especially when studying sea level changes, where the GPS height of the benchmark is used for defining an absolute sea level datum, problems occur when correcting the time series for height changes of the TGBM.

To overcome this problem and to demonstrate IGS's capability to provide products also for the sea level research the Tide Gauge Benchmark Monitoring Pilot Project (TIGA-PP) was initiated. The primary product of the service will be time series of coordinates for analyzing vertical motions of TGBMs. Moreover, several groups are committed to study the time series in detail, carry out inter-technique comparisons to e.g. DORIS or absolute gravity, and to review the strategy to estimate vertical rates.

Different Analysis Centers are providing weekly solutions for selected GPS stations near TGs on a continuous basis. Several centers already processing older GPS data back to 1993. This will not only extend the time period for the estimation of vertical rates, but will also improve the reference frame stability.

Recently the total numbers of stations participating in TIGA crossed the one hundred. The network coverage becomes more and more global and, thus, useful not only for sea level related studies but also for reference frame stability studies.

For up-to-date information about the status of TIGA observing stations and products see also the WEB page at <http://op.gfz-potsdam.de/tiga>.