



Current Status of a Near-Real Time High Rate (1Hz) GPS Processing applied to a Network located in Spain and surrounding for Quick Earthquake Magnitude Determination

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The earthquake true size and tsunami potential can be determined using GPS data up to only 15 minutes after earthquake initiation, by tracking the mean displacement of Earth's surface associated with the arrival of seismic waves (Blewitt, 2006).

We are using this approach to get quick assessments of earthquakes' magnitudes. Data files with 1 Hz data sample, of Continuous GPS (CGPS) networks, located in Spain and surrounding, are analyzed with Bernese 5.0 software. Relative movements are computed to detect horizontal, but also vertical, surface's deformations due to large magnitude earthquakes. Accuracy is expected at millimetres level. Moreover, CGPS 1 Hz data is less sensitive to noise contamination than seismic data (Larson et al, 2003).

Some UNIX scripts built in Perl, make Bernese to run batch processes every 15 minutes: CGPS network stations' data files are downloaded, in order to be analyzed automatically. The process output is a new set of coordinates for each station, which is compared with those we have got before, looking for deformations in near real time.

The poster shows the implementation and the present status of the analysis. We present the chosen network results, and some time series examples in the three components are also shown.