



## **Possibilities of detection of dynamic seismic displacements in Central Europe by analysis of high-rate GPS recordings**

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The high-rate recordings of GPS satellite signals with 1 s sampling which are feasible for majority of recent GPS receivers are used predominantly in navigation or kinematic surveying applications. In the paper is evaluated the potential of GPS positioning in kinematic mode for monitoring the actual site movements related to the seismic phenomena. Firstly, the possibilities of reducing the short-term noise in 1 Hz position time series focusing on the multipath effect using the method of sidereal filtering will be discussed. Next, the analyses of high-rate recordings of several earthquakes, with magnitudes from M 9.0 to M 4.3 will be demonstrated. We will examine both the single point and the differential positioning approaches. For strong seismically induced displacements the Precise Point Positioning approach in kinematic mode with unambiguous interpretation is fully convenient. For less strong seismic effects the analyses based on relative positioning has to be applied as well. We will focus the discussion about the possibilities of seismic displacements analyses in Central Europe where the magnitude of displacements is relatively small; however the coverage of the territory with GPS sites operating at 1 s sampling interval is sufficiently dense.