Testing the Accuracy of Large–Scale GNSS–R Applications

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Key words: Bridge surveying; Deformation measurement; Hydrography; Remote sensing; GNSS-R; Accuracy testing

SUMMARY

Global Navigation Satellite System Reflectometry (GNSS-R) is a promising technology with a huge potential. Naming just few most interesting applications, remote sensing of the sea surface roughness and salinity, snow structures, and sea-ice characterization, we can realize the importance of GNSS-R. Due to a variety of possible platforms (satellites, aircrafts, helicopters, etc.) different resolutions are available for the final users, which imply, also, different scopes of the accuracy. In this paper we are testing the resolution and accuracy of a water surface level obtained by GNSS-R. We utilizied a platform set to a pedestrian bridge, with two GNSS receivers. One of them is attached to the upper side of the platform, while the other is placed upside-down, directing to the water mirror. The upper GNSS will receive only the direct signals from the satellites, while the latter one will create its position only according to the „false" measurements, meaning the signals reflected from the water. Knowing the mutual positional relation between the two receivers, we can calculate the height of the water mirror and, after longer measuring sessions, monitor the change of the river level.

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FIG Working Week 2015
From the Wisdom of the Ages to the Challenges of the Modern World
Sofia, Bulgaria, 17-21 May 2015