



## **Distorsion of Croatian national positional reference system CROPOS after the earthquake M6.2 in NW Croatia**

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The precision of geodetic measurements is reliable as much as the reference on which the measurements relies on. From the aspect of today's most used geodetic method, the GNSS measurements, its reference is defined through a national reference frame established with corresponding reference stations. Hazardous earthquake of M=6.2 occurred in NW Croatia at the very end of year 2020. Earthquake was one of the most hazardous natural phenomena in Croatia in the last century. Due to the tremendous damages left behind, in which also one of the national GNSS reference station temporarily out of the service, we analyzed how much earthquake had impacted the surrounding reference stations and overall the Croatian national reference frame CROPOS. The presentation shows the analysis of GNSS time series in order to determine the scale of displacement of the CROPOS CORS GNSS reference stations due to the earthquake. The results show the greatest shift of 5 cm east on Sisak reference station, with stations in circumstances of 100 km impacted by the earthquake and shifted between 1 and 2.5 cm positional and 2-4 cm in height. Identified displacement of national reference frame and the ground displacement over the affected area will have domino effect on the geodetic field measurements and cadastral survey on that area.