



Detection of the vertical movements using the GPS and the absolute gravity measurements

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The horizontal and vertical movements of the Tatra Mountain have been determined by the epoch GPS measurements since 1998. The control network has been composed of 11 specially stabilized points. The GPS measurements have been performed annually by the Slovak University of Technology and the Warsaw University of Technology. The epoch duration has varied from 4 to 5 days. Since 2005 the 2 sites, Lomnický štít and Ganovce, were transformed to permanent GPS stations. All measurements have been processed using the Bernese software following the unified procedure. Since 2004, the repeated absolute gravity measurements have been performed by FG5, No. 215 (Research Institute of Geodesy, Topography and Cartography, Czech Republic) instrument at 4 sites in the vicinity of the GPS points. The purpose of the absolute gravity measurements has been to verify the vertical movements resulting from the GPS measurements by independent technique. The results of gravity measurements have confirmed the vertical trend indicated by the GPS measurements. In our contribution to section G10 we present the comparison of models of vertical movements, GPS model and the gravity model.