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Application of inclinometer measurements to relative horizontal displacement investigations on landslide grounds

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One of the basic criterion for safety evaluation of structures erected on embankment or landslide shoulder is relative horizontal displacement of scarp layers at different elevations. This paper presents the results of horizontal displacements of slope surface below St Ana's Church in Warsaw. Relative horizontal displacements were measured in two inclinometers columns 14 meters deep using SIS GEO precise inclinometer with force balance servo-accelerometer. Within 10 months time five complete cycles of observations were performed. Mean square error of single observation was determined and mean errors of relative displacements in relation to column depth. The data analysis allowed to estimate systematic errors in common series of measurements and eliminate survey blunders. Based on the results of the measurements several relevant recommendations and practical hints were formulated.

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