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Geokinematical implications inferred from analysis of permanent stations in Central European region

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The GPS permanent stations situated in Central Europe region are systematically analyzed in order to investigate behaviour of long-term monitoring of horizontal position and ellipsoidal height. On the basis of data from more than 50 sites the quality of the station is evaluated. Stability of station is measured by variety of parameters: jumps and discontinuities of known but also of unknown origin, seasonal variations amplitudes and phases, frequency dependent noise parameters, frequency of occurrence of outliers and differential velocity characteristics. We estimate for each network station its main deterministic characteristics including eventual jumps magnitude and time of occurrence, annual changes and long-term velocity. Additionally, the residuals are subject to noise modelling by estimating white and coloured noise parameters. The set of criteria for defining "stable" permanent station is proposed. After considering all detected disturbances are critically evaluated the estimated horizontal and vertical velocities in the Central European region.