



GPS strain rates reliability over Poland related to reference frame realization.

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Observations from navigation satellite systems (mainly GPS) for many years are used for the Earth's crust movement and deformation monitoring. Today we have a possibility to detect the smallest displacement (below 1 cm) and thanks to greater density of the networks in recent years we can provide accurate deformation rate field. This is particularly important in regions with high tectonic activity, where this type of research can improve the safety of residents. Knowledge of the deformation rate is also important in the mining industry, where, together with the value of the rates is as important as the reliability of its calculation. In Central Europe, where the relative movements of the Earth's surface are small, we should be careful to interpret the results of GPS measurements. Especially in case of we use data from the GPS stations which are not designed to measure Earth's surface movements. Therefore, there exists a need to develop method that allows to verify the reliability of the strain rate maps calculated from GPS networks. Poster shows the first stage of the project 2013/09/N/ST10/03569. It shows how the reference frame realization of Polish network (ASG-EUPOS) affects the obtained deformation rates and main directions.

This will allow to verify if in case of tectonically stable regions observation from GPS stations give consistent results in comparison to geological surveys or if they present seeming deformation's directions and earth's surface movements. The project result will also try to answer the question what is the demand for new GPS stations strictly for geodynamical purposes. This is especially important in the context of preparations for the EPOS project, whose main objective is the integration of existing infrastructure (including GPS stations) for Earth's science.