



## **Determination of strain tensors from repeated geodetic measurement by web application**

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Web XML application to on line calculation of strain tensors (deformation analysis) from repeated positional geodetic measurement is described. Parameters like strain tensors and total dilatation are determined in a grid covering the area of interest. As calculation input serve the displacement vectors from repeated (stage) measurements at given points of geodetic network. The calculation is based on theory of continuum mechanics and as basic condition is homogeneity of the area in question. It is a purely geometric solution.

To graphic representation of calculated results in the form of GIS, use the application of WMS (Web Map Services), developed on the base of standards of Open Geospatial Consortia. The user does not need to own any geographic data to create GIS. Nevertheless he is able to compose his actual thematic map of the chosen territory with content that is defined by himself and add to it graphic representation of results of deformation analysis his survey data as next layers.

An examples of practical application based on processing of repeated geodetic measurement demonstrating practical independence of calculated values of strain tensors on rotations and translations of coordinate systems are also given. This reflects the fact that the deformation analysis is a more objective indicating instrument of dynamics of the place in question than sole calculation and representation of vectors of station displacements.

Essential principles, advantages and significances of applied technologies are shortly outlined to make clear chances of above-mentioned services. Application is ready to on-line calculation using Internet for all interested people.