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Integration and Processing System of Data Obtained from Open Source Servers for Interpretation of Deformation Measurements

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The increasing number of data made available on Open Source servers allows for interdisciplinary interpretations of deformation measurements at both the local and the continental scales. The openly available vector and raster models of topographic, geological, geophysical, geodetic, remote sensing data have different spatial and temporal resolutions and are of various quality. The reliability of deformation modelling results depend on the resolution and accuracy of the models describing factors and conditions, in which these deformations take place.
The paper describes the structure of a system for integration and processing of data obtained from Open Source servers including topographic, geological, geophysical, seismic, geodetic, remote sensing and other data needed for interpretation of deformation measurements and development of statistical models. The system is based on GIS environment in the scope of data storage and fundamental spatial analyses and support of external expert software.
In the paper the results of interpretations and statistical models in local and continental scale taking into account analysis of the data resolution and accuracy and their influence on the final result of the modelling have been presented. Example influence models taking into account quantitative and qualitative data have also been shown.