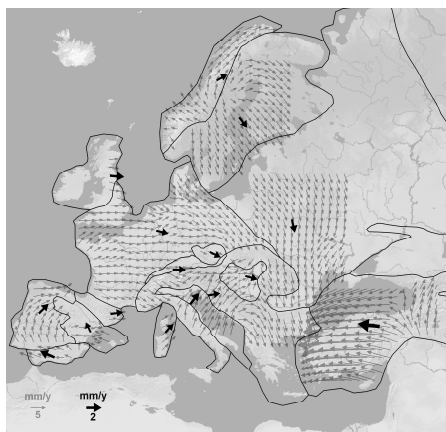


## HORIZONTAL MOVEMENTS OF THE TECTONIC UNITS OF EUROPE BASED ON DATA OF EPN SERVICE

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**Abstract:** Contemporary geodynamic investigations on a global and regional scale are being realized by network of permanent GNSS stations distributed all over the Earth. The Continental EPN (EUREF Permanent Network) is a European network of 200 permanent stations and the main assignment of EPN is the maintenance of ETRF89. One from many available products as part of project “EPN Coordinate Time Series Analysis Special Project” are components of the velocity vectors of EPN stations. The analysis, interpretation and visualization of motion velocity vectors of permanent stations can be used for different interdisciplinary research, especially for locally geodynamic investigations. The main aim of



the elaboration was to find a correlation between velocity fields of EPN stations and the tectonics of Europe. Based on the geological maps, major tectonic structures have been distinguished. For each unit the continuous velocity field has been developed by means of kriging's method of interpolation. Moreover, to establish the areas of homogenous changes, the k-means method of cluster analysis technique was used. One of the research stages was to find the answer to the question about possibility to determine average velocity vector of motion for each tectonic unit, which will be illustrating mobility of the whole tectonic structure.

**Key words:** tectonics of Europe, EUREF Permanent Network, geodynamic researches, cluster analysis, horizontal movements.

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