Geophysical Research Abstracts
Vol. 14, EGU2012-13199, 2012
EGU General Assembly 2012

Using GIS for calculation and visualization of the velocity field

P. Grzempowski (1), B, Kontny (1), J. Bogusz (2), and A. Kłos (2)

(1) Wroclaw University of Environmental and Life Sciences, Institute of Geodesy and Geoinformatics, Wrocław, Poland , (2) Military University of Technology, Centre of Applied Geomatic, Gen. Sylwestra Kaliskiego 2, 00-908 Warszawa 49, Poland

In the paper structure of the system to collect data about the GPS permanent station velocities and velocity field modelling were described. The system includes modules for data managements, calculation and visualization. These modules were created in Visual Basic. Data management and visualization modules use ArcGIS .NET library for manage the data structure and drawing. This allows to visualize the velocity field and integrate spatial data and data (qualitative and quantitative) described the phenomenon and accompanying factors.
This system allows to develop a model of the strain field in triangle network (TIN strain model) and model of the velocity field in regular grid. Some functions and procedures like spatial analysis are used to split points into separate sets, which are connected with tectonic units. Thus, it is possible to develop velocity fields in the sub-areas.
System operation was described on the example of modeling the velocity field on the Poland area. Inputs to the model were velocities of the ASG-EUPOS stations.