Poland such as Holy Cross Mountains, Sudetes Mountains, Cracow - Czestochowa Upland, Carpathians, etc. The geological regions are subordinated to physical and geographical sub-provinces according to the Kondracki division system. The main purpose of Database is systematization and integration of geomechanical rock properties, and their quick search option for large multi-subject data sets. Each component of the Database is identifiable geospatially by means of the material ("rock object") source location in the geographical coordinate system. With that, all data collected in the Database meet the GIS system requirements and allow co-operating with other information sets within the system.

Based on the unified research procedure adopted by the Department of Geomechanics UW, test results the BDG contains more than 50 000 strength and strain parameters; nearly 100 000 parameters of ultrasonic tests; and more than 40 000 parameters of physical features. Besides in database the data from special tests are collected such as surface roughness for rock fractures; long-term rock deterioration susceptibility under influence of weather or chemical factors. The base deals with data of rocks used currently as raw materials as well as not used recently for industrial purposes for various reasons, for instance due to the location within national parks.

The BDG operates basing on two systems cooperating with each other: The General Database system collecting data on the server, and The System of Applications for viewing the collected data, acquiring new data and for generating reports responding to queries.

The System of Applications consists of three modules: Main Module (MM), Search Module (SM) and Report Module (RM). The Main Module is intended for viewing the entire data base content and for entering new data. The Search Module provides with information selection required by the user. The Report Module presents reports in tables or graphics according to the available options.

The MM structure consists of seven hierarchic information levels in the following sequence: rock origin region, data of the object, rock type, geomechanical parameter, type of examination, data for sample group and data for single rock sample.

Created by Department of Geomechanics the Geomechanical Database operates based on the SQL programming language, which guarantees the system architecture compatibility with different up-to-date data bases. The applied information technologies provide with a full exchangeability of geomechanical data with other GIS systems, where UML, GML, GeoSciML, or XMML language was applied.

The BDG 'foundation stone' was the need for a quick search solution for data contained in large multi-subject data sets. Such solution was necessary for publishing the catalogues for Polish rock properties in the regional division. That is why the adopted internal database structure allows presenting selected information in tables or diagrams as well as quickly selecting information for scientific researches thanks to the in-built search module.

The Database layout allows presenting the data either against the background of well-known geomechanical classification systems, or in needed sets of results. The Database is open and being permanently extended. Parts of the Database are available on the http://www.geo.uw.edu.pl/geomechanika

Photogeological interpretation – an efficient tool for tectonic analysis. Study case – the Oas-Gutai Mts. (NW Romania)

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Besides the detailed photogeological and volcanological maps, the geological photointerpretation on the Oas and Gutai Mountains (OGM) led to the detailed deciphering of the fractural elements which affected the area following the lower Miocene obduction of the Pienidic Units from the Central-East Carpathians. The photogeological interpretation reveals the *nappe* units disposal of the Pienides system (Botiza, the Wildflysh and some other already mentioned units in the area like Magura, Babesti-Tiacovo, Kricevo, with different spatial and structural disposal from author to author). The slides structure composed by imbricate entities

WSW/ENE oriented, with maximal development on 300-400 m width and 1-2 km length within an entity with frequent sequences of discordance is revealed. This image closely fits to the structural model of the frontal Nappes of the Botiza Unit as outlined in the area of maximum outcropping and is extended upon the entire Botiza and Wildflysch Units (conformable to the main entity of the nappe units upon which sporadic outcropping and consistent Upper Miocen sedimentary cover are observed). The development of the crystalline rocks assigned to the Internal Dacides Units vs. Tisia-Dacia as well as of the Cretaceous, Paleogene and Upper Miocene deposits and mostly of the Badenian-Pannonian volcanics have defined a crustal puzzle difficult to decipher, which favored different cartographic and structural interpretations. Based on the photogeologic image, the tectonic interpretation evidenced the major fractures in OGM area: 1. *NE Gutai Fault*, 2. *Dragos Voda-Bogdan Voda Fault*, 3. *Suior-Baia Sprie Fault* (the last two ones being frequently taken one for another), all sinistral strike-slips. We designed also the corresponding sintetic/antitetic faults, as well as other minor faults with considerable structural effects.

The statistic analyses of all fractural alignments quantified by discordant measurable segments (considered proportionally with the value of the fractural amplitude) led to the vectorial representation of the major fractures and their associated syntetic/antitetic secondary faults (1., 2., 3.) advancing the cinematic model (translational and rotational) of the analyzed tectonic block (OGM). The model indicates northeastward movement and counterclockwise rotation (45^0-60^0) as compensation (retreating) effect of the convergence generated by the oblique collision of the major tectonic plates (East European Plate/African Plate). This cinematic hypothesis (collision at open angle to WSW) seems to infirm the closing sense of the oceanic basin, illustrated by the migration of the foreland basin depocenter in front of the Carpathian arc from W to SE and can be explained only by a specific oblique collision of this tectonic area. The reconciliatory advanced solution of the two interpretative scenarios regarding the Miocene kinematics of the area is a NE peninsula part of the Tisia-Dacia block or of a distinct crustal entity with its own kinematics (Zemplin), at northern joint of the Alcapa / Tisia-Dacia Units. A detailed evaluation of each fractural entity including compressive/distenssive associated assembles (pull apart, positive flower structure, double compressive bands, bypass bends, distenssive and compressive bends etc.) has been performed.

Post-subduction Pliocene-Quaternary magmatism in the south-east part of the Carpathian-Pannonian Region: tectonic significance

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The SE part of the Carpathian-Pannonian region records the cessation of convergence between the European platform/Moesia and the Tisza-Dacia microplate. Pliocene-Quaternary magmatic activity in this area, in close proximity to the 'Vrancea zone', changed from normal calc-alkaline type to much more diverse magma compositions at approximately 3 Ma, suggesting a significant change in geodynamic processes. We review the tectonic setting, timing, petrology and geochemistry of the post-collisional volcanism to constrain the role of orogenic processes such as subduction and collision on melt production and migration. The calc-alkaline volcanism (5.3-3.9 Ma) marks the end of normal subduction-related magmatism along the post-collisional Călimani-Gurghiu-Harghita volcanic chain in front of the European convergent plate margin. In South Harghita magma compositions changed at 3 Ma to adakite-like calc-alkaline and continued until recent times (< 0.03 Ma) interrupted at 1.6-1.2 Ma by generation of Na and K alkalic magmas, signifying changes in the source and melting mechanism. We attribute the changes in magma composition in front of the Moesian platform