Vienna Basin during Middle to Late Miocene times. D_{F2} and D_{F3}, identified in the Outer West Carpathians are therefore interpreted as to be linked to Miocene extrusion kinematics. ENE-striking strike-slip faulting (D_{F2}) may represent Early Miocene kinematics. NNE-directed out-of-sequence thrusting and (N)NE striking strike-slip faults (D_{F3}) are interpreted to be linked to the pull-apart stage of the Vienna Basin. Considering several blocks moving towards (N)NE at different velocities during Miocene lateral extrusion, structures of D_{F3} may depict a transfer of such (N)NE-directed movements to thrusts into the Outer West Carpathians.

Groundwater vulnerability assessment to contamination (Erzeni Basin, Albania)

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Groundwater quality has been recently deteriorating in different alluvial aquifers of Albania due to industrialization expansion, waste disposal, and agriculture activity. A preliminary assessment of vulnerability to groundwater contamination in Erzeni watershed area was undertaken because of enormous mining activities of river bed alluviums, the presence of the largest urban solid waste disposal site of Tirana and intensive agricultural and industrial activities at the plane part of the river course. The major geological and hydrogeological factors that affect and control groundwater contamination were incorporated into the DRASTIC model. Moreover, a Geographical Information System (Arc Gis 9.2 INFO) was used to create a groundwater vulnerability map of Erzeni river basin. Aquifer vulnerability assessment aims at predicting areas, which are more likely than others to become contaminated as a result of human activities at the land surface. As a result of the vulnerability assessment, 20% of the Erzeni basin was classified as being very highly vulnerable, 5% highly vulnerable, 15% vulnerable at moderate to low levels and, finally, around 60% of the basin has very low vulnerability.

Crust to upper mantle geophysical imprints of the West Black Sea opening

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Some inherited geophysical evidence in the lithosphere of the SE Carpathians, created by the geodynamic processes related to the W Black Sea opening are subject of the paper.

During the time, various models have been proposed for the Black Sea genesis. They are dominated by the idea of the basin opening within the back-arc extensional environment created behind Pontides by the northward subduction of the Neo-Tethys ocean floor.

Overall, the presence of the oceanic crust in the central part of W and E Black Sea basins is well revealed in the pattern of the geomagnetic anomaly.

But, the hypothesis of the Black Sea opening during a unique geodynamic event is less supported by the residual geomagnetic and gravity anomalies pattern, showing completely different strikes for western and eastern Black Sea. Besides, gravity high, typical for the presence of the oceanic crust correlates with a geomagnetic high (normal magnetization) within W Black Sea, while E Black Sea, the gravity high correlates with a geomagnetic low, advocating for a reverse magnetization of the crust. These aspects advocate for a distinct opening of the W and E Black Sea basins during two time-spans with normal and, respectively, reverse geomagnetic field.

In depth extension of the W Black Sea rifting processes is well revealed by the seismic tomography. Two major issues are well outlined by the geophysical information provided at various levels: the indent representing the lithosphere expelled towards the Carpathians (which is consistent with the two types of the Moesian Platform basement), and the splitting of the Moesian Plate (MoP) into several slivers by reactivation or creation of some deep crustal/lithospheric faults striking north-westward.

Some of the well known regional faults on the Romanian territory (e.g. Sfantu Gheorghe Fault (SGF), Peceneaga-Camena Fault (PCF), Intra-Moesian Fault (IMF)) may be seen as lithospheric boundaries deep to more than 100 km.

After the Black Sea opening ended, it seems that the geodynamic engine in the area became the active rifting within SW Arabian Plate, pushing the plate northward by about 48 mm/year. After accommodating about 15 mm/yr along the North Anatolian Fault, part of the motion is relocated to the Black Sea microplate, pushing the East Carpathians foreland encompassed between PCF and IMF towards NW. Evidence of this push are provided by the Quaternary (Walachian) folds in the bending zone of East Carpathians, and, more recently, by the stress revealed by borehole breakouts studies, or direct geodetic monitoring of the crust deformation along the PCF flanks.

It seems that under this stress, the above-mentioned MoP compartments advance towards the Carpathians kept together by friction. However, from time to time, when tectonic forces overcome the frictional forces the above-mentioned lithospheric slivers may relatively slip each other thus generating earthquakes within their brittle, upper part. This may explain the unusual intracratonic crustal seismicity of the eastern Moesian Platform.

Within the bending zone of East Carpathians, speed excess provided to MoP by the W Black Sea opening created circumstances for the occurrence of an unstable FFT (transform-transform-compression) unstable triple-junction between the three tectonic plates joining the area: MoP, East European Plate (EEP) and the Intra-alpine Microplate (IaP).

Results of a combined inversion of seismic and gravity data are fully consistent with the assumption, by revealing a prismatic triangularly shaped high velocity compartment collapsed into the upper mantle, having vertices parallel to the plate boundaries. Therefore, Vrancea unstable triple-junction (VTJ) might be responsible for the unusual intermediate-depth seismicity within full intra-continental environment. The sinking into the hotter upper mantle of a colder lithospheric compartment generates P-T disequilibrium to which thermo-baric accommodation phenomena (e.g. thermal stress, phase transform processes) may occur as seismic sources.

In depth distribution of the Vrancea intermediate-depth seismicity, with maxima located at the depths where the colder high velocity (seismic) body met the hotter asthenosphere of the surrounding tectonic plates is fully consistent with the assumption.

Top of geological maps creation in the last forty years in the Slovak Republic: a new general geological map 1 : 200 000

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Geological mapping in the territory of the Slovak Republic has a long tradition. The climax of production of geological maps in the last century was a complete edition of synoptical maps 1:200 000 at the beginning of 60-ies. The centre of gravity in the following period was shifted to systematic geological mapping in the scale 1:25 000. Mapping was organized in particular geomorphologic units – regions. These maps had utilized for compilation of regional maps 1:50 000 which were issued together with book explanations for public using. Hither-to the nearly whole Slovakian territory is covered by regional geological maps in scale 1:50 000. The first regional map 1:50 000 was issued in the 1972 and to the present day number of 47 regional maps from the total of 51 were issued. When compared with other countries it is relatively high per cent covering of the territory. On the basis of the