EGRSE Journal, Volume *VII / 2000*, Number *1–2*, pp. 2 – 8

An influence of the salt concentration in the formation water on the neutron characteristics of water

Ryšavý, F.[1]

[1]Karotáž a cementace s.r.o., Velkomoravská 83, 695 01 Hodonín Czech Republic

Abstract

Endeavour doing an investigation of NaCl–concentration in the formation water to recognise how that fact effects the neutron characteristics was issued from calibration of neutron logs. An experience, since which it had been proved that the interpretation model of any rock could be synchronously described with three components: the rock matrix, the mud fluid and the formation water, contributed to that. As the formation water involved a certain amount of dissolved salts, among them NaCl in particular, we needed to know how the salt could effect those characteristics.

That is why the paper analyses an influence of salt concentration in relation to the neutron characteristics of the formation water. Its influence is presented by formulas serving as functions of the mentioned characteristics in the formation water. The new theoretical data are compared to empirical data with the help of statistical methods. For verification of newly derived formulas there is used the sample t-test applied on two selected neutron characteristics. The tested neutron characteristics, which are the middle lifetime of thermal neutrons and the density of substance signed as τ and ρ, are also characterised with the regression coefficient determining tightness being between theoretical and empirical data of the above characteristics. The regression, which is of various type, has its regression coefficient equal to one, nevertheless, it does not entitled us to declare that the newly derived theoretical formula can replace the empirical one. It can be done only with the sample t-test. The resting neutron characteristics L_z, D, μ and $\bar{\mu}$ are not tested, because the needed empirical data for testing have not been found. This is an opportunity for ones who will want to continue in the supposed way of verification of those resting neutron characteristics.

EGRSE Journal, Volume *VII / 2000*, Number *1–2*, pp. 9 – 17

Distribution of uranium and thorium is some rocks of Central Eastern Desert, Egypt, as a guide to the determination of uranium migration in and out

Adel F. Khalil[1] and Baher M. Ghieth[1]

[1]Nuclear Materials Authority, P.O. Box: 530, Maadi Cairo, Egypt

Abstract

As a fact uranium and thorium are often associated in magma due to their similar ionic radii. However, uranium is easy to mobilize and migrate under the action of oxygen from under ground water and atmosphere during its evolution. Whereas thorium is relatively stable in oxidation zone, and stay in place, as the result breaking the original U-Th state, i.e. the present Th-high area could be considered as the original U-high. Uranium mobilization could have taken place during the metamorphism. The first stage of uranium mobility is oxygen bearing atmosphere factor for uranium ore formation as well as for fundamental and local uranium source formation. Oxygen bearing ground water is an effective uranium-mobilizing agent, which can leach uranium dispersed in the rocks and uranium can later be concentrated within sediments. The second stage of uranium mobilization could be have taken place during the metamorphism of these sediments and later on through magma generation from the metamorphosed sediments. These geological processes assist the multifold mobilization of uranium formation of its fundamental and local sources and the first economic concentration of uranium (Simov 1988). The variations of uranium and thorium with their ratios reflect the amount of remobilization of uranium, which is examined according to Charbonneau(1982).

EGRSE Journal, Volume *VII / 2000*, Number *1–2*, pp. 18 – 28

Results of seismological measurements by the Kraclice network in the period 1991–1998

Nehybka, V.[1] and Skácelová, Z.[1]

[1]Institute of Physics of the Earth, Masaryk University, Tvrdého 12, 602 00 Brno

Abstract

Institute of Physics of the Earth has been acquiring data in Western Bohemia since April 1991. Monitoring network of five stations is continuous in the time period of nine years. Registration is digital, only parts of seismic signal selected by the trigger algorithm are recorded.

Western Bohemia is known for the swarm type seismic activity from history; the last strong earthquake swarm was registered in years 1986–86, the last swarm with the great number of weaker earthquakes was in January 1997. In the period 1991–98 thousands of earthquakes were registered. Seven areas with an occurrence of seismic activity were observed, the area of Nový Kostel was the most active. Focal mechanisms of stronger earthquakes were computed. This article provides a brief overview of our activities.

EGRSE Journal, Volume *VII / 2000*, Number *1–2*, pp. 29 – 42

Indikace fosilních říčních koryt v mšensko-roudnické pánvi geofyzikálními metodami

Skopec, J.[1] and Kobr, M.[1]

[1]Universita Karlova, PřF, Ústav hydrogeologie, inženýrské geologie a užité geofyziky, Albertov 6, 128 43 Praha 2

Abstract

The physical manifestation of fossil river valleys is decribed in the region of Mšeno-Roudnice Carboniferous Basin. The character of wave field distortion caused by ancient river sediments is demonstrated and the problematics of backward erosion is discussed as well with respect to its influence on the contemporary state of sedimentary section conservation. Examples of fossil river valley indications prove the different quality of their physical manifestations.

(text in Czech)

EGRSE Journal, Volume *VII / 2000*, Number *1–2*, pp. 43 – 49

Hierarchy and periodicity of ruptures in the Earth's crust (Model of PER systems)

Květ, R.[1]

[1]Květ, R., J. Babáka 7, 612 00 Brno, Czech Republic

Abstract

Earth sciences in the present state are characterized - particularly some of them - by disagreement in views. It is geotectonics that experiences a profound crisis, because it provides a number of hypotheses from ultramobilistic to ultrafixistic ones. At the present time, primary attention should be given to the integration of the basic findings of geology and of those related to astronomy (planetology), physical geography and physics. In modern practice synergetics, i.e. a system approach using the principles of hierarchy and cyclicity, should serve as the initial common model.

EGRSE Journal, Volume *VII / 2000*, Number *1–2*, pp. 50 – 52

Svahové deformace v údolí řeky Maili–su

Bláha, P.[1] and Abdullaev, Š.[2]

[1]Geotest a.s., 28. října 287, 709 00 Ostrava, Czech Republic
[2]Uzbekgidrogeologija, Taškent, Uzbekistán

Abstrakt

Horská pásma ve střední Asii včetně jejich předhůří jsou silně postižena svahovými deformacemi. Můžeme tam najít celou škálu různých typů porušení svahu, ploužením počínaje a řícením konče. Tak jako jsou rozdílné formy svahových deformací, tak je odlišný i jejich objem. Jednou z největších svahových deformací je skalní zřícení Sarez v Pamíru v Tádžikistánu, jehož objem je 2.2 km^3. Pro porovnání objem jednoho z našich největších sesuvů, sesuvu Šance–Řečice, je 7 miliónů kubických metrů, tj. asi 300 krát méně. Za tímto skalním zřícení vzniklo jezero o objemu 17 km^3. Opět porovnáme-li s objemem naší největší nádrže, zjistíme, že do přirozeného jezera by se vešlo asi 25 orlických nádrží.