

Nuclear magnetic resonance (NMR) and mercury porosimetry measurements for permeability determination

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Permeability, the most important reservoir property of rock can be directly measured on samples and determined using various statistical relationships between petrophysical parameters. We tested usefulness of Swanson parameter obtained from the mercury porosimetry results and T2 relaxation time from the Nuclear Magnetic Resonance (NMR) to find adequate formulas to improve permeability determination. We used the Devonian carbonates and the Carboniferous mudstones from the Western Carpathians and the Rotliegend sandstones from the Foresudetic Monocline in Poland. New factors as Swanson parameter or T2 relaxation time in NMR are effective in creating empirical relations describing reservoir parameters of rocks. Precision of measurements and features of rock decide about quality of the relations and their effectiveness.

Statistics to improve results of well-logging interpretation in reservoir rocks: Two cases from the Carpathian Foredeep

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Principal component analysis, cluster analysis, and discriminant analysis were applied to well-logging data from the Miocene clastic formation in the Carpathian Foredeep, Poland. The main goal was to improve the results of interpretation of well logging in terms of determining gas-saturated horizons. The presented examples illustrate how statistical methods help limit the number of log data while preserving sufficient information. In addition, the two cases illustrate the grouping of data into clusters to reveal sets of features attributed to reservoir horizons and sealing layers and construction of discrimination functions to distinguish between gas- or water-saturated beds of sandy-shaly lithology.

Preliminary results about a new locality with micromammals from the Early Miocene deposits of the Kazan Basin (Central Turkey)

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A new fossil micromammal locality was discovered within the framework of the EU VAMP (Vertical Anatolian Movements Project) Topo-Europe Project. The locality is an old quarry situated in the area of the village Gökler, in the southeastern part of the Kazan Basin, N of Ankara. The section is characterized by few coal horizons and by alternate whitish, greenish and pinkish silty mudrocks, partly laminated. During summer 2009 field campaign, the section was sampled for ostracodes, pollen, small mammals and for magnetostratigraphy. Unfortunately, the signal from paleomagnetic samples was weak, but few samples showed