parallel to the strike of the belt in the sinistral transpression regime. The apparent shift of the main compression to the N-S direction was an effect of a rigid counterclockwise rotation of the ALCAPA block during the Early Miocene. Mostly strike-slip and normal faults were formed during the next two tectonic events (Middle to Late Miocene) as a product of the transtensive tectonic regime with NNE-SSW to NE-SW trending compression. Active clockwise rotation of the main compressional stress axis from N-S to NE-SW direction, and inversion from the older transpression to the younger sinistral transtension resulted from NE-ward translation of the ALCAPA block. The NE-SW trending normal faults were generated by the NW-SE extension during the final deformational phase under the extensional tectonic regime (Pontian-Pliocene).

Development of Lower Cretaceous deposits from Bihor-Pădurea Craiului unit (Apuseni Mountains, Romania): Comparisons with Villany region in Hungary

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The Lower Cretaceous deposits from Bihor-Pădurea Craiului unit follow a sedimentary gap due to the uplift of the region at the end of the Late Jurassic, when bauxitic rocks were formed. The succession consists of the following lithostratigraphic units: (1) Blid Formation, comprising two members: (1a) Dobreşti Member (Valanginian-Hauterivian) known in the old literature as "Limestone with characeans and gastropods"), and (1b) Coposeni Member (Barremian), the old "Lower Pachyodont limestone"; (2) Ecleja Formation, consisting mainly of marls, but containing also two lithologically different members: (2a) Gugu Breccia Member (Upper Barremian), and (2b) Valea Bobdei Limestone Member (Lower Bedoulian), corresponding partly to the old "Middle Pachyodont limestone"; (3) Valea Măgurii Limestone Formation (Upper Bedoulian), also corresponding partly to the old "Middle Pachiodont limestone", and (4) Vârciorog Formation (mainly marls and sandstones, with limestone intercalations) (Gargasian-Albian) that correspond to the old "Formation of glauconitic sandstones and Upper Pachyodont limestone". Of these lithostratigraphic units Dobreşti Member and Ecleja Marls have been often a subject of controversy. The age of Dobreşti Member proved to be Valanginian-Hauterivian. Regarding the Ecleja Marls, recent researches revealed that the succession of the startotype is younger as considered before (Late Aptian-Albian, instead of Late Barremian-Early Aptian). Other recent researches have shown the development of a large pile of Upper Aptian-Albian platform limestones, equivalent of limestone intercalations within the Vârciorog Formation. These new data change our understanding of the Bihor-Pădurea Craiului basin evolution during the Aptian-Albian time interval. At the biginning of Aptian, a deeper basin was formed. On local highs within the basin isolated carbonate platforms developed (Valea Bobdei, Valea Magurii, and Subpiatra Limestones). Material from these platforms can be found as debris flows (allodapic limestones) intercalated in the terrigenous succession of the basin.

Within the Villany Hills (Hungary) the Nagyharsány Limestone formed also on the Upper Jurassic Szársomlyó Limestone Fm revealing bauxite lenses (Harsányhegy Bauxite Fm) at its base. The age of the Nagyharsany Limestone wich consists of four lithologic (calcareaous) members is considered as Valanginian-Early Albian. It is covered by the Bisse Marls of Late Albian-Cenomanian age. No other marl intercalations were reported from the Nagyharsany Limestone.

The Bisse Marl is replaced at a marked contact by flysch type succession of the Bóly Sandstone Formation in the Late Albian. Based mainly on micropaleontological association the lower part of the Villány succession could be compared with the Dobreşti and Coposeni members of the Blid Formation, while its middle and upper parts of the Nagyharsány Limestone could be correlated with Valea Bobdei-Valea Măgurii, and Subpiatră Limestones, respectively. The Vârciorog Fm is equivalent to the Bisse and Bóly Formations.

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Clay, secondary dissolution, and tectonic controls on the reservoir properties in Upper Eocene tuffs, West Thrace Basin, Turkey

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The diagenetic history of the Upper Eocene tuffs in the West Thrace Basin is based on petrological analysis of samples from six boreholes. Diagenesis in the tuffs principally involves the progressive development of various types of cements in the following order: quartz overgrowth, zeolite authigenesis, chlorite and illite authigenesis. After the formation of the cementation phases, there was a dissolution phase creating secondary porosity via the dissolution of volcanic class and feldspars, accompanied by generation of analcime and a late mordenite cementing phase. The tuffs also have been affected by the following diagenetic processes; fracturing and calcite, quartz, and zeolite cementation.

Tuffs in the West Thrace Basin may contain significant amounts of secondary porosity owing to unstable grain and volcanic glass dissolution caused by relatively rapid rates of pore-fluid flow. Also tectonic stress appears to have controlled development of secondary porosity formation in the West Thrace basin which in turn might have been responsible for high porosity of the deep reservoirs. At depths greater than 2000 m, the porosity increases with depth due to secondary solution activities and fracturing in the West Thrace basin. Secondary Porosity is very important for hydrocarbon explorations in the Upper Eocene tuffs in the West Thrace basin. The dominant porosity type produced by dissolution processes (intragranular, intergranular). Fracture porosity also significantly increases reservoir quality. Authigenic clays may affect reservoir quality depending on type of clay and its distribution. However, dissolution and fracturing are generally a more effective diagenetic process than cementation in the tuffs of West Thrace basin.

Statistical tidal tomography of the Vrancea intermediate-depth seismic zone

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The aim of the study is to identify specifically temporal and spatial patterns of the intermediate seismic activity in Vrancea seismic zone using new approaches. We have investigated the influence of the principal lunar semidiurnal tidal component M2 on intermediate seismic activity in Vrancea (Romania) sub-crustal region from 1934 to 2009 with a special regard for the time series of events from 1980 to 2009. The constituent is assigned by HiCum stacking method according to the earthquake occurrence. “Schuster” and “Permutation” independent tests are applied to distributions found by stacking. Null hypothesis between seismic activities and selected tidal periodicities is rejected when the statistical p-values obtained by the two tests are less than 5% level of confidence in term of statistics. The stacking function is applied to time series of events belonging to windows