Discoaster kugleri. Besides the listed species, the typical association of this zone was also represented by freguently occuring *Coccolithus pelagicus, Cyclicargolithus floridanus, Helicosphaera carteri*, *Sphenolithus moriformis* and *Umbilicosphaera rotula* and sporadically observed *Calcidiscus leptoporus* and *Calcidiscus premacintyrei*. The *Discoaster kugleri* Zone (NN7) assignment was based on the abundance of *Coccolithus miopelagicus* (>10µ), used as an alternative species essentially confined to that interval, and absence of *Catinaster coalithus*. The NN7 Zone is difficult to distinguish because of absence or scarce abundance of significant marker species such as discoasterids and *C. coalithus.* The paleoecological preferences of nannoplankton species in S-3 and S-4 were considered in regard to temperature and nutrient availibility (trophy).The enrichment of *C. pelagicus* and *C. floridanus* in sediments could indicate the nearshore eutrophic environment with high nutrient levels in surface water and upwelling paleoconditions. To upwelling-prefering group belong numerous *H. carteri* and small *Reticulofenestra*. The scarcity of discoasterids, which are more common in open ocean assemblages, could confirm shallow and coastal paleoenvironment as a negative indicator however its distribution depends on paleogeographical settings. It occurs much more often in Mediterranean area than in Paratethys. Deposition near the coast and relatively shallow water depth could result in high percentage of reworked specimens, which prevails over autochthonous ones in most samples from S-3 and S-4 boreholes. The percentage of autochthonous specimens is less than 50% and fluctuates between 40-50%. Reworked material, of the Cretaceous and the Paleogene age, comes from the south, from eroded Carpathian orogene.

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Study of time dependent earthquake occurrence in Greece: Relationship between seismicity rate changes and stress transfer and implications for time dependent seismic hazard assessment.-

Leptokaropoulos K.[1], Papadimitriou E.[1], Orlecka–Sikora B.[2] and Karakostas V.[1]

[1]*Geophysics Department, School of Geology, Aristotle University of Thessaloniki, GR54124 Thessaloniki, kleptoka@geo.auth.gr, ritsa@geo.auth.gr, vkarak@geo.auth.gr*

[2]*Seismology and Physics of the Earth's Interior, Institute of Geophysics, Polish Academy of Sciences, Warsaw, Poland, orlecka@igf.edu.pl*

The relationship between changes of seismicity rate and static Coulomb stress is investigated at different sub–regions of the broader Aegean area. Seismic activity is studied at specific areas of interest, which are characterized by intense seismic activity and strong earthquake occurrence, known from both historical and instrumental data. The division of the area is based upon seismotectonic criteria, considering the regional kinematic properties, local seismicity and the available fault plane solutions. Coseismic stress changes are modeled and along with the tectonic loading are taken into consideration for stress change calculations. Data used for modeling contain events with magnitude greater or equal to a threshold magnitude, M_c, separately identified for each sub–region and time period. Simulations are done considering either the influence of aftershocks or declustered data. The spatial distribution of seismicity is translated into earthquake probability for both the observed and expected seismicity rates, by the application of a probability density function (PDF). Statistical process requires a normal grid superimposed on the study area. Spatial variable model parameters are calculated and then are linearly interpolated at the center of each cell of the normal grid. The dimensions of the cells are chosen in regard with the epicentral location error and the size of the catalog, such that a sufficient number of events being present in each cell and a realistic estimate of seismicity rate is done. Different values of model parameters are tried, with their limits being defined by physical and observational constraints, in order to test the sensitivity of the model in their fluctuation. Values for which results are closer to the observations are considered to express better the physical conditions and processes of the regional tectonic regime. Qualitative and quantitative correlation between the observed and the expected seismicity rates provide a test for the validity and sufficiency of the model.

Qualitative correlation is done by comparing the mapped patterns of observed and expected seismicity rates, while quantitative correlation is calculated by the application of statistical tests, i.e. calculation of the correlation coefficient, r. Once the model is tested in previous cases, an estimation of the expected number of small earthquakes or the probability of a large shock to occur in the future is performed for each one of the studied sub-regions. An earthquake forecast for shocks with magnitude greater than or equal to a minimum magnitude M, is attempted for specific regions and for a settled time period, contributing to a more reliable time–dependent seismic hazard assessment.

Larger foraminiferal stratigraphy and paleoenvironments of the Middle Eocene to Lower Oligocene shallow-marine units in the northern and eastern parts of the Thrace Basin, NW Turkey

Less G.[1], Özcan E.[2] and Okay A.[3]

[1]University of Miskolc, Department of Geology and Mineral Resources, H−3515, Miskolc−Egyetemváros, Hungary, foldlgy@uni−miskolc.hu
[2]İstanbul Technical University, Faculty of Mines, Department of Geology, Maslak 34469, İstanbul, Turkey, ozcanerc@itu.edu.tr
[3]İstanbul Technical University, Eurasia Institute of Earth Sciences, Maslak 34469, İstanbul, Turkey, okay@itu.edu.tr

Several sections of the shallow-marine Eocene Soğucak Limestone and one of the Oligocene Ceylan Formation were studied with detailed biometric analysis of the full spectrum of larger benthic foraminifera (mainly nummulitids and orthophragmines). This allows us establishing a high-resolution biostratigraphy in the context of the shallow benthic zonation (with SBZ zones) of the Tethyan Paleogene since larger foraminiferal assemblages show a very strong Western Tethyan affinity. Only two species (*Heterostegina armenica* and *Orbitoclypeus haynesi*) cannot so far be traced to the west of the Thrace Basin.

The age of particular larger foraminiferal sites is determined based on (i) the occurrence and developmental stage of different species of *Heterostegina*, (ii) the presence/absence of giant *Nummulites*, (iii) the presence/absence of *Spiroclypeus*, (iv) the developmental stage of reticulate *Nummulites*, (v) the occurrence and developmental stage of orthophragmines, (vi) the occurrence of particular *Operculina* and radiate *Nummulites*.

Six larger foraminiferal horizons could be established. They correspond to (i) the vicinity of the early/late Bartonian boundary (SBZ 17/18), (ii) the middle late Bartonian (SBZ 18B), (iii) the latest Bartonian (SBZ 18C), (iv) the early Priabonian (SBZ 19), (v) the late Priabonian (SBZ 20) and (vi) the early Rupelian (SBZ 21).

Three main shallow-water depositional environments could be recognized in both the late Bartonian and Priabonian: two of them took place in the inner shelf: one with low, and another with high water-energy, whereas the third one refers to the outer shelf.

Biostratigraphical and paleoenvironmental observations allow us to reconstruct three subregions with different depositional histories. (i) The eastern part of the territory with a basement of the İstanbul zone was transgressed at the beginning of the middle late Bartonian (SBZ 18B) followed by the drowning of the carbonate platform still in the latest Bartonian (SBZ 18C). (ii) The Çatalca block lying on the Strandja Massif formed a paleohigh at whose peripheries a similar depositional history can be reconstructed as for the former subregion, however the central part was transgressed only in the (early) Priabonian and was not drowned at all. (iii) The northern margin of the Thrace Basin (also lying on the Strandja Massif) was transgressed only in the latest Bartonian (SBZ 18C) or in the early Priabonian (SBZ 19) and the Priabonian carbonate platform has only partly and moderately been drowned. This subregion very probably formed the northern margin of the whole Thrace Basin in the Paleogene.