

## **A new high resolution palynological and geochemical study of the Paleocene-Eocene Thermal Maximum from eastern Peri-Tethys**

**Alina I. Iakovleva, Galina N. Aleksandrova, Yury O. Gavrilov,  
Olga V. Golovanova, Boris G. Pokrovsky**

Geological Institute, Russian Academy of Sciences, 109017 Moscow, Russia

A new high resolution palynological and geochemical data from a 6.5 m thick interval spanning the Paleocene/Eocene transition including PETM-interval is made in the marine key-section from eastern Peri-Tethys: the Kheu River outcrops (Kabardino-Balkar Republic, central Northern Caucasus, Russia). The uppermost Paleocene is composed of soft greenish marls, while sediments corresponding to the PETM interval are represented by 0.5 m thick sapropelite layer and ~1.5 m thick greenish calcareous clays.

Short-lived geologically extremely warm episode- the PETM-event is confirmed in the Kheu River section by coupled evidence of negative (~2–3.5‰) excursion in stable carbon isotopes (CIE), occurrence of dinocyst key-species *Apectodinium augustum* and *Wilsonidium pechoricum*, as well as the appearance of calcareous nannofossils *Rhomboaster* spp. (NP10 nannofossil zone) (see Shcherbinina et al., this Volume).

A high resolution quantitative analysis of dinocyst associations of the sapropelite layer corresponding to the maximum of  $\delta^{13}\text{C}$  excursion shows an increase in abundance (acme) of tolerant to low salinity gonyaulacoids (*Polysphaeridium* spp., *Homotryblium* spp.) and peridinoids (*Apectodinium*/*Wilsonidium*), while dinocyst associations of the sediments overlying the sapropelite bed (with less pronounced  $\delta^{13}\text{C}$  excursion) are characterized by significant decline of *Apectodinium*-abundance and dominance of open-marine *Spiniferites*-group.

Variations in dinocyst abundance combined with lithological and geochemical data enabled us to propose a possible pattern of environment dynamics during the PETM in considered area of eastern Peri-Tethys, which we will present in our talk.