middle tectonic level (Starcevo Unit) along the Starcevo Fault. More to the east the Starcevo Unit is juxtaposed to overlying rocks of the Borovica Unit along the Borovica Fault, which probably represents the border between the middle and the upper tectonic level.

U-Pb zircon geochronology was carried out on samples from deformed and undeformed pegmatite veins which were taken a) in the border area between the Arda and Starcevo units in the hanging-wall of the Starcevo Fault near Nedelino, and b) in the area of the Borovica Shear Zone at the western flank of the Pripek Granite along the road to the village Dolen east of Zlatograd. For a) preliminary results show a zircon crystallization age of around 36 Ma for an undeformed vein, for b) preliminary results show zircon crystallization ages of around 44 Ma for mylonitic veins and therefore suggest a Lutetian age for the activity of the Borovica Shear Zone.

We propose a model where the lower tectonic level of the RMP is Apulia-derived and where the present-day structure of the Rhodopes can be explained by a subduction polarity reversal from SW-dipping in the Jurassic and Early Cretaceous to NE-dipping in the Late Cretaceous and Palaeogene.

A petrologic examination and detailed mapping of the tectonic margin between the Jurassic Pindos-Vourinos ophiolite and metamorphic Triassic-Jurassic Pelagonian platform carbonates in West Macedonia, Greece

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At the end of this decade, the Ilariona hydroelectric dam will be completed in west Macedonia (Greece). The Aliakmon, the longest river in Greece, will be dammed and its valley will be flooded. Within the area to be flooded the Aliakmon has cut a valley deep into the contact zone between the mid Jurassic Pindos-Vourinos oceanic lithosphere complex and the Paleozoic-mid Jurassic continental Pelagonian margin. In order to preserve as much information as possible, the Aliakmon Legacy Project aims to gather geological data from the future flooded areas. In the framework of this project, a detailed geological map has been prepared and rock samples have been analyzed in the lab.

The Pindos-Vourinos Ophiolite is a spoon-shaped ophiolitic nappe that was obducted in Jurassic time. The Vourinos Ophiolite is located at the leading edge of the nappe whereas the Pindos Ophiolite is located at the trailing edge. According to the fracture pattern with a common dip of 40° to the SW, the mapped area can be located in a central position at the leading edge of the Pindos-Vourinos Ophiolite.

Various techniques have been used to analyze collected rock samples. In addition to petrographic and a reflected light microscope techniques, data has been acquired using electron microprobe analysis (EMPA). For the ophiolitic section, it could be shown that the degree of serpentinisation increases with proximity to the contact zone. Relicts of olivine and pyroxenes can be found together with chromite and magnetite. EMPA displays high content of oxygen, magnesium and silica for the peridotites. Furthermore, a relative accumulation of chromium relative to magnesium (10:1) can be found in the altered outer zones of chromite minerals compared to less altered inner zones (3:1). Towards the thrust sole, increasing shear strain causes tectonic brecciation (deformed host rock remnants in highly sheared matrix) as well as mylonitic occurrences of peridotite.

The Pelagonian carbonates of the Vounassa vary from microcrystalline over sugary-grained to granular crystalline rocks. Intermittently, brownish, reddish or white bands cut through the carbonates. Close to the shear zone, the carbonates have been metamorphosed to marble. Thin sections of the granular crystalline carbonates display angled crystals, partly with twin lamellae distorted by kink bands. The mylonitic marble contains larger-grained

calcite crystals with kink bands and smaller included quartz grains. Overall, the Pelagonian carbonates have been subjected to an early ductile deformation that is crosscut by a subsequent brittle deformation.

Between the ophiolitic nappe and the Pelagonian carbonates lies a 400 m – 600 m thick wedge of phyllitic to schistose sediments with intercalated fault wedges, the Zavordas Mélange (ZM). The main part of the ZM is formed by the Agios Nikolaos Formation. This formation is predominantly composed of phyllitic, pebbly mudstones and carbonate mylonites. The carbonate mylonites are very soft and easy to erode. Thus, the Aliakmon mainly cuts its valley into this unit. It contains microcrystalline as well as granular crystalline calcite with kink bands running through twin lamellae. Furthermore, a minor amount of quartz can be found. The fault wedges, intercalated in the ZM, consist of autochthonous as well as allochthonous rocks. The allochthonous rocks are meta-diabase, pillow lavas and the so-called “rainbow rocks“. The meta-diabases contain twinned plagioclases and grain size grades to gabbroic. The pillow lavas exhibit intersertal mineral laths and few epidotes. The “rainbow rocks” include interbedded strata of quartz-bearing micritic carbonates, volcanic ashes and tuffs and detrital silts.

Large parts of the mapped area are covered by young conglomerates, breccias and rock slides either from Vounassa or Vourinos mountains.

Lithostratigraphy of the Pleistocene deposits of Georgian sector of the Black Sea

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Researches took place in the South of Georgia (Guria region). Studied geological sections lie 1.5-4 km from the present Black Sea coastline. Pleistocene marine sediments are represented by terraces located at different hypsometric levels with maximum height 120 m on the mountain of Tsvermaghala. Due to neotectonic movement, the Old Euxinic sediments are located at the higher hypsometric level than the younger Uzunlarian and Karangatian. In the region under study the background sediment of the base of Old Euxinic sections, are mud deposits, upward they gradually pass to fine and middle size sands. The base sediment probably was deposited in offshore zone at a depth until approximately 50 m. The Uzunlarian and Karangatian sediments are represented by typical shore zone sediments. Uzunlarian sediments unconformably overlie the inverted Miocene. The base of these sediments contains abrasion clay blocks of the before Pleistocene age. Chemical analysis of the Pleistocene and contiguous resent Black Sea shore sediments on metal content reveals similarity of feeding provinces. The higher contents of manganese and Nickel in the resent sediments are caused by anthropogenic factor. Stratigraphy of the studied region is based on the mollusk and ostracode faunistic complexes. Old Euxinic sedimentation conditions were more favorable for the fauna conservations than Uzunlarian and Karangatian ones, which contains very poor fauna and boundary between them is conventional.