by the roll-back of the subducted plate of the Northern Hellenic Trench, produces an elongated N-S trending basin with relatively straight shorelines along the lake. These in particular are linked mostly to N-S trending active faults that are formed by extension and point to active subsidence. The evolution of the shorelines during the Holocene was investigated by studying extensive parts of the present-day coastline, including locations in the northern and southern plains as well as deltas of inflowing rivers and mass movement bodies on the eastern shore where a steep relief is exposed. Ground Penetrating Radar and electric resistivity have been applied as non-invasive shallow subsurface mapping methods to image sedimentary and tectonic structures and unconsolidated sediment cores were taken to support the geophysical data. The southern plain is dominated by alluvial plain deposits and deltaic foresets, generated by the meandering Cerava River. This could be validated by the geophysical data. The northern plain shows fluvial-dominated sequences including channel structures which are underlain by deltaic sediments and foresets. The Velestovo site to the east of the basin provides evidence for a shallow lagoon or marsh environment by peat deposits with periodical clastic input of the Velestovo creek. A change in the drilled sediments from peat to clayey marls at a depth of 8 m suggests a change in the depositional environment, which can be related to a sudden lake-level drop or to tectonic activities. No evidence for a higher lake-level during the Holocene was found in the plains north and south of the lake, except rare temporal floodings, which are also documented historically and lacustrine faunal elements (ostracods, Chara) encountered within the sediments. The abrupt change in sediment composition in the core of the east coast can be related to a sudden lake-level drop, enhanced discharge of the karstic springs or to tectonic activities. Considering the tectonic activity of the region and the landscape architecture a tectonic event is likely the cause of this effect. In conclusion, the plains north and south of the lake are dominated by clastic input related to climate variations and uplift/erosion, whereas the steep western and eastern margins are controlled tectonically by normal faulting. Mapping of the limestone cliffs around Lake Ohrid yielded no evidence for abrasional platforms or notches as indicators for past higher lake-levels. Hydroacoustic survey exhibited several drowned platform like terraces at depth ca. of 30 and 60 m below present-day lake level.

Cosmogenic ^{10}Be dating of Danube terraces in Hungary

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Quaternary development of the Danube valley in the Pannonian Basin is of crucial importance for the understanding of the landscape evolution and neotectonics of the region. The Danube River is the only river crossing the uplifting Transdanubian Range (TR), therefore providing a unique opportunity for the quantification of the Quaternary river incision/uplift rate of the TR. The TR is a low altitude (up to 750 m) mountain range composed to Palaeozoic to Mesozoic basement between the two major sub-basins of the Pannonian Basin System. Accordingly, for a better understanding of the structural evolution of the area, it is necessary to calculate the vertical movements and to distinguish between tectonic and climatic forces in landscape evolution. The existing terrace chronology – the so called "traditional terrace system" – in the Danube valley was based on geomorphological, sedimentological and palaeolontological data. These data, however, allow only a relative chronology, which is valid at certain river sections and does not provide numerical ages of the terrace horizons. Exposure age dating of the Danube terraces has started in the axial zone of the TR, where cosmogenic ^{3}He was used to determine the age of andesite strath terraces. These data showed that Danube terraces, and connected uplift of the TR are significantly younger then it was suggested before. Instead of the late Pliocene – early Pleistocene onset of the uplift suggested by the traditional terrace system, a middle Miocene beginning was proposed with an uplift rate above 1 mm/y. This result is indicative of ongoing tectonic deformation of the interior of the Pannonian Basin and rises the need for absolute age determination of river terraces at other valley sections, too. Accordingly, as a continuation, our study now focuses on gravel terraces upstream of the Danube Bend. Here earlier studies, using relative chronological data of the terracegravel suggest early Pleistocene age of the highest terrace horizons. We apply cosmogenic ^{10}Be for age determination, aiming at finding evidences on the young vertical movements at several sections of the Danube valley. Sampling occurred along depth profiles using all particles involved in the cosmogenic nuclide production and allowed determining the exposure time denudation rate pairs for each locality. Sample preparation occurred at CEREGE-CNRS, Aix en Provence and AMS measurements occur at ASTER, the French National Facility, CEREGE. Measurements and calculations are on their way, our first results show that the formation of the highest horizons occurred in middle Pleistocene times (ca. 600ka) in contradiction to the formerly suggested earliest Pleistocene age. The lower horizons also appear to be younger than their age based on previous relative chronologies. The first denudation rates calculated by the depth profile data suggest slow denudation of the flat terraces surfaces, the average values ranging around 4-6 m/My. Exposure ages are in accordance with the previous ^{3}He study, that is to say, the dated gravel terraces also appear to be younger than it was suggested by previous works. These results suggest that considerable vertical movements occur in the lithosphere of the Pannonian Basin and ongoing deformation contradicts the theoretical tectonic stability of the basin interior.

Petrogenesis and tectono-magmatic significance of volcanic and mantle rocks from the Albanian-Greek ophiolites: Implications for the Triassic-Jurassic evolution of the Dinaride Tethyan branch

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The Albanian-Greek ophiolites crop out in two major ophiolitic zones: 1) the External Ophiolites (EO) which can be subdivided into: a) a westernmost belt (EOa): W Mirdita, Pindos, Koziakas, Othrys; and b) an easternmost belt (EOb): E Mirdita, Vourinos, Argolis. 2) the Internal Ophiolites (IO) which can be subdivided into: a) Almopias ophiolites (IOa) and b) Guevgueli ophiolites (IOb). Many stratigraphic and petrological similarities can be observed between ophiolites from the IO and EO.

The Albanian-Greek ophiolites and sub-ophiolitic mélanges include eight different types of volcanic rocks: 1) Triassic, within-plate alkaline rocks (WPB) which are included in both EO and IO mélanges; 2) Triassic high-Ti mid-ocean ridge basalts showing enriched compositions (E-MORB) (EO and IO mélanges); 3) Triassic (EO and IO mélanges) and Jurassic (EOa) high-Ti mid-ocean ridge basalts showing normal compositions (N-MORB); 4) Jurassic medium-Ti basalts (MTB) (EOa); 5) Jurassic low-Ti, island arc tholeiitic (IAT) rocks (EOb and IOa); 6) Jurassic very low-Ti (boninitic) rocks (EO and IO ophiolitic and mélange sequences); 7) Jurassic back-arc basin basalts (BABB) (IOb); 8) Triassic (EO and IO mélanges) and Jurassic (IOb) calc-alkaline rocks (CAB). They also include two types of mantle peridotites: 1) depleted lherzolites (EOa) and 2) harzburgites showing various degrees of depletion (EOa, EOb, IOa). The main aim of this work is to identify the possible petrogenetic mechanisms, in terms of mantle sources, primary melt generation, and mantle residua, for the distinct lava groups and their related tectonic settings of formation, in order to propose a reconstruction of the tectonic evolution of the Mesozoic Dinaride Tethys as follows:

1) From the Late Palaeozoic-Early Triassic, extensional tectonics affecting the Gondwana trigged the rifting of the continental lithosphere. The magmatic activity included: (a) CAB rocks generated from a sub-continental mantle formerly modified by SSZ geochemical components; (b) alkaline WPBs deriving from an OIB-type mantle source.