$UO_2 (CO_3)_2^{4+}$. The Uranium ionic radium (1.05 A°) is almost similar to one of Calcium (1.06 A°). Uranium is assumed to move freely in the water of soil profile after the processes of dissolution and precipitation of carbonate parent material occurred. It is claimed that its mobility is favoured by acid conditions, whereas in an alkaline pH the adsorption of its oxide would be increased. Until now very few papers studied natural Uranium in soils. Recently, the concentration of naturally occurring radionuclides (238U, 232Th, Knat) was measured in some Red Mediterranean soils from carbonate rocks in Spain, Italy and Turkey using gamma-ray spectrometry at the Gran Sasso National Laboratory of INFN (Italy). The Uranium content ranges from 1 to 5 ppm, the content for Thorium ranges from 3 ppm up to 30 ppm, whereas for Potassium varies between 0.13% and 1.3%. The results indicated that soils characterised by absence or scarcity of 2:1 clay minerals are poor in uranium, whereas soils with illite–smectite as the dominant minerals in clay fraction are noticeably richer.

Continuing some previous study on the paleosols natural radioactivity, this research demonstrated that soil Fe/Mn glaebules (nodules and concretions as well as the related coatings) are able to capture and include significant uranium contents together with some rare heavy metals. The research was carried out using thin section autoradiography by CR 39 transparent plates in order to locate the alpha track emitters. Transparent plates of CR 39 (artificial poly carbonate) were placed for exposition on the glaebules polished section for several months. After a chemical etching (by a NaOH solution) of CR 39 detectors to show alpha tracks damage, their location on thin section by overlapping of CR 39 transparent plates and the corresponding density of tracks (proportional to % of U (being assumed the thorium absence) was performed by an image analysis software (Image J). Some results were validated by the gamma- ray spectrometry and also suggested useful application to identify the uranium movement along soil profile and as strong relationship which are like to exist between uranium and some component of organic matter as well as the phosphate material and natural bitumen in both soils and some carbonate rocks.

First results of a geophysical Pre-Site Survey in the Philippi peat basin, eastern Makedonia, northeastern Greece

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Under the administration of the Centre of Quaternary Science & Geoarchaeology (QSGA) the Collaborating Research Centre (CRC) 806 „Our Way to Europe“ started in summer 2009. The project is founded by the German Research Foundation (DFG). In this CRC the QSGA is concerning about the dispersal of modern Man from Africa and the permanent establishment of Man in Central Europe (QSGA, 2009). The fieldworks, done during the summer 2009 in Greece by the Institute for Geology and Mineralogy from the University of Cologne, was targeted as a preside survey to find therein after a location for a drilling. This drilling is aimed as an extendend paleoclimatic research analog to the works of Müller but with the intention to drill at greater depths. With different geophysical methods (TEM, VES, RMT) the quality of the Tenaghi-Philippon-Basin as a historical climate archive should be evaluated. The Tenagi-Phillipon Basin is the south-west part of the larger Drama Basin. The Drama Basin is an intermontane basin lying in-between the metamorphic rocks of the Rila-Rhodope-Massif. It was generated during a late brittle deformation in Miocene times after the exhumation of the Southern Rhodope Core Complex (SRCC) in middle Eocene times. Therefore, the SRCC and the associated Negoene sedimentary basins offer the most complete record of the about 40 My of Aegean extension. The dimension of the basin and its sediment deposition is tectonically as well as climatically controlled. The sedimentation of peat endured over the last 700 000 yr until the drainage of the basin in 1931 to 1944 for

agricultural usage. The sediments of the Philippi Sub-Basin covers an area of about 55 km² and reaches a thickness of about 400 m, thus it is the thickest known peatland in the world. The sediments can be divided in two Beds. Bed I is a peat free of intercalations with a thickness of about 190 m. Bed II are limnic sediments with a lot of intercalations and a thickness up to 400 m.

The location for the measurements was placed at the largest extension of the basin between the villages Krinides and Eleftheroupolis. This poster presents the first results of the TEM-Fast measurements along two profiles. One profile was conducted from the north (Krinides) to the south (Eleftheroupolis), to verify the overall basin's structure. The second profile was arranged rectangular to the first one and stretches from the west (Stathmos) to the east (Dato). The results of the pseudo 2D inversion show a general conductivity distribution of a basin structure: A max. 100 m thick 7 Ωm layer (Bed I) over a more resistive (> 100 Ωm) half space which can be assumed to be Bed II. This finding correlates with cores that were drilled and analysed by Melidonis. The thickness of Bed II could not be verified from the data, due to the fact that the depth of penetration is not sufficient to detect the top of the bedrock. Plotting the data shows a general basin structure from the north to the south with its declining towards the centre and a possible thickness of the peat of Bed I.

How many “black flysches” can be distinguished in the Grajcarek thrust-sheets of the Pieniny Klippen Belt in Poland

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The age of the “black flysch” deposits occurring in the contact zone of the Magura Nappe and the Grajcarek thrust-sheets of the Pieniny Klippen Belt (PKB) in Poland has been a matter of a long lasting discussion. In the PKB, black shales (“Black Cretaceous”) of a Barremian to Albian age with intercalations of thin- to thick-bedded muscovite sandstones and spotty marls, overlain by the Upper Cretaceous red shales were distinguished in the 30-ties of the last century. Later on, basing on some macrofauna evidence, these beds were assigned to the Middle Jurassic. In stratigraphical scheme of the PKB these beds were called the “Aalenian Flysch” and described as the Szlachtowa (Toarcian-Aalenian) and Opaleniec (Bajocian) formations. Another black flysch deposits were distinguished as the Wronine (Lower Albian) and Hulina (Albian-Middle Cenomanian) formations at the base of the Upper Cenomanian-Campanian red shales. Such a division has been established by Birkenmajer in a standard scheme for PKB. The presence of two black flysches was already questioned by Sikora in 1962, who documented that the beds assigned to the Aalenian Flysch, represented Albian-Lower Cenomanian deposits, passing upwards into the Upper Cretaceous red shales. For the last few years, the authors have studied and sampled several sections which record the relation between the “black flysch” and Cretaceous red shales in the Grajcarek thrust-sheets. In all the studied sections “the black flysch” appears in the core of imbricated folds or thrust-sheets, whereas the limbs are composed of the Upper Cretaceous deposits. The transitional beds between the “black flysch” and the Upper Cretaceous red shales are composed of green and black, bituminous shales with manganese oxide coatings, green radiolarites with pirite framboides, cherty limestones, and finally very thin layers of dark, non-calcareous shales. In the cherty limestone the Albian-Cenomanian calcareous nannoplankton was found. Biostratigraphical investigations have revealed similar type and sequence of microfauna assemblages in all the studied sections. It should be stressed that significant redeposition of Jurrassic? calcareous benthic foraminifera, molluscs, sponge spicules and elements of crinoids has been observed in the microfaunal assemblages recovered from the black flysch turbiditic sequences. The Cretaceous age (Albian-Cenomanian) of the black flysch is confirmed by the presence of agglutinated foraminifera such as *Hippocreppina depressa*, *Trochammina abrupta, Bulbobaculites* cf. *problematicus.* The green shales with manganese coating contain abundant radiolaria in various state of preservation and finely, the Cretaceous red shales the assemblages with characteristic agglutinated taxa *Tritaxia gaultina* and