Geophysical Research Abstracts
Vol. 19, EGU2017-13998, 2017
EGU General Assembly 2017
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PRELIMNARY RESULTS of GEOCHEMISTRY of LAKE ERÇEK VARVED SEDIMENTS and ITS RELATION WITH DETRIAL INPUT; EASTERN TURKEY

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Lake Erçek is a closed basin and it is located to the east of Lake Van and about at 1808 meters elevation. The area of the lake is about 106 km2, the maximum depth is 30 meters and the average depth is 18.45 meters. The lake water is soda. And the lake is located in a basin which is formed in Upper Pliocene - Lower Pleistocene. Lake Erçek is situated in a tectonically active area and near by active volcanoes on a high plateau in Eastern Anatolia. Three climate systems (Monsoon System, Midlatitude Subtropical High Pressure System and Siberian High Pressure System) cause continental climate (cold and wet winters, warm and dry summers) for the region of Lake Erçek.

The study is carried out within the scope of international cooperation projects between TÜBİTAK and RFBR (Russia) with the number of the project is 114Y825. In this context short sediment cores were collected from the Lake Erçek. XRF, TOC-TIC analyzes of core samples were carried out at Istanbul Technical University EMCOL laboratories. The XRF non-destructive analyses done with a XRF core scanner. With XRF core scanner we got the good quality image of the sediments, radiographs and a XRF elemental analysis. TOC-TIC analysis done by Shimadzu analyser.

According to the first findings in this ongoing study, TOC-TIC amount derived from Lake Erçek is high. The TOC contents changes between %1.3-%4.9 and TIC content changes between %1.3-3.5. XRF core scanner profiles of elements, such as K, Ti and Fe, along the cores provide information on the detrial input. These core analysis with lithological observation shows the detrial rich layers form during high precipitation periods and carbonate rich layers during evaporative dry periods. The geochemical profiles along the short cores show that environmental conditions changed significantly in the past.