Geophysical Research Abstracts
Vol. 18, EGU2016-13301, 2016
EGU General Assembly 2016

Geology of the Göçükdibi Cu-Pb-Zn Mineralization, Gökçedoğan, Çorum (Turkey): Preliminary Findings on Its Formation

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Göçükdibi Cu-Pb-Zn mineralization is located 3 km north west of Gökçedoğan village where is 30 km east of the Kargı, Çorum. The geology of the mineralization area is represented by Mesozoic and Upper Pliocene lithostratigraphic units in different origin. These units with respect to their structural locations have identified as autochthonous and allachtonous. The autochthonous units which are the basement of the region are represented by Bekirli Metamorphites (Triassic-Liassic) and Beşpınar formation (Upper Cretaceous-Lower Eocene) which overlies the Bekirli Metamorphites as angular discordance. The allachtonous units are represented by Saraycık formation belongs to Kargı Ophioltic Melange, and located on the autochthonous units as tectonically. These allocthonous units are the product of the Neotethyan Ocean. The autochthonous and allachtonous units are overlaid by Upper Pliocene Ilgaz Formation and Plio-Quaternary stream sediments.
The Cu-Pb-Zn mineralization is located in northwest of the Gökçedoğan village within the Bekirli Metamorphites. The ore zone has N80E direction, 5 m wide and 120 m in length. The mineralizations which follow NE-SW trending structural line occurred as alternation with quartz–chlorite schists of the Bekirli Metamorphites. The mineralization is generally concordant to the foliation of schist's and also occurred as disseminated in the wall rocks. The ore paragenesis comprises with pyrite, chalcopyrite, sphalerite and galenit as the main sulphide minerals, and the malachite, azurite and limonite as the production of the oxidation. Preliminary data such as relationship between the ore and host rock, inner-structure of the ore and indicate that the Gökçedoğan Cu-Pb-Zn mineralization was likely to have originated syngenetic. In addition, the geochemical behaviour of rare earth elements (REE) of the altered and mineralized samples collected from the alteration zone show that light REE enrichment with fair depletion of heavy REE during the alteration processes with positive Eu anomalies. As well as there is a positive correlation between K2O index and LREE that reveal the addition of K and La and the sericitization is the main alteration associated with the studied deposit.

Key Words: Cu-Pb-Zn mineralization, Syngenetic, Bekirli Metamorphites, Gökçedoğan.