SULFUR ISOTOPE STUDY OF KURŞUNLU (ORTAKENT-KOYULHİSAR-SİVAS) VEIN TYPE Pb-Zn-Cu DEPOSITS

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ABSTRACT. - Kurşunlu Pb-Zn-Cu deposits are the typical examples of the vein type deposits which are widely seen all over the southern and western parts of Eastern Black Sea region. They are deposited along the fault zone which cut the Upper Cretaceous, mostly andesitic, partly dacitic volcanic and volcanosedimentary rocks. Galena, sphalerite, pyrite, chalcopyrite, calcocite and hematite are seen as ore minerals while quartz, calcite and small amount of barite occur as gangue minerals. Isotopic composition ($d^{34}S_{CDT}$) of the galena, sphalerite, pyrite and chalcopyrite mineral separates from these mineralizations, are as follows; -6.6 - -8.4°/°°, -4.6 -- 7.6°/°°, -4.3 - -6.0°/°° and -3.7--6.3°/°°. These are the negative values range between -3.7 and -8.4 °/°°. A possible isotopic equilibrium seems to be developped between sphalerite and galena, and it suggests an average formation temperature of 327°C according to the sulfur isotopes fractionation thermometer. According to these isotopic composition; It is very difficult to identify the source of the sulfur in these ore veins as magmatic, marinal or biologic. But it may be suggested that the sulfur in this composition have been produced as follows; A magmatic sulfur with an isotopic composition nearly zero ($d^{34}S$) which dissolved from the surrounding volcanic and volcanosedimentary rocks by deep circulated suificial water was shared between sulfates (which useheavier isotopes; such as barite) and sulfides (which use lighter isotopes) of the veins as parallel to the isotopic fractionation trend.