

## **RB-SR DATING OF SPHALERITES FROM EL TOQUI ORE DEPOSIT, SOUTHERN CHILE.**

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The El Toqui District is located at Aysén region, southern Chile and includes zinc, gold, copper, lead and silver mineralizations. The main ore bodies are stratiform mantos hosted by lower Cretaceous coquinaoid limestones and lesser veins hosted by upper Jurassic-lower Cretaceous dacitic volcanic rocks. Some authors proposed a Zn-Pb skarn model for the origin of the ore deposits, considering that the mineralization is syngenetic to 108-100 Ma quartz-feldspar porphyry intrusions. At El Toqui mine the mineralization in the Manto Principal unit consists predominantly of sulphides, mainly replacing 128-116 Ma fossils or in the calcareous matrix. The sulphides are mainly sphalerite, pyrite, pyrrhotite. Pb isotopic compositions show an average of Cretaceous upper crust-lower crust mixing as the best approximation to the origin of the mineralizing fluid. In order to determine the age of El Toqui mineralization, Rb-Sr analyses on sphalerite, by steepwise leaching technique, have been carried out on two samples from the Manto Principal unit. Sphalerite has advantage over some indirect approaches, such as K-Ar and Ar-Ar methods on alteration minerals, for directly dating mineral deposits, due to sphalerite is an ore mineral. The leached products define a Rb-Sr isochronic precise age of  $100 \pm 2$  Ma, with Sr initial ratio of  $0.70589 \pm 0.00006$  and MSWD = 0.7. The age is interpreted as the timing of mineralization.