

## **Micro-inclusions in Ag-bearing sulphosalts assemblages – possible key to estimate the ore fluid evolution in Dealul Crucii ore deposit, Romania**

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Dealul Crucii ore deposit is located in the central part of the Baia Mare Neogene metallogenetic district in the Eastern Carpathians. This deposit is a gold – silver - base metals epithermal deposit of low-sulphidation type according to the mineralogy and hydrothermal alterations (adularia-sericite) [1, 2]. There is also a clear metal zoning: silver and gold in the upper parts and base metals in the lower levels. The main ore bodies are located mainly in Sarmatian-Pannonian andesites hydrothermally altered.

The ore mineralogy consists of Ag-bearing sulphosalts associated with gold, base metals sulphides and other Pb, Fe, Cu-bearing sulphosalts. Dealul Crucii deposit is world-wide known as the type locality for fülöppite [3].

Interesting assemblages of Ag-sulphosalts, mainly pyrargyrite-proustite, were observed under the microscope showing various micro-inclusions difficult to identify at this level. Preliminary qualitative analyses (SEM) suggested the possibility of complex associations of various Pb-, Fe-, Cu, Ag-bearing sulphosalts. Similar small inclusions not yet identified were observed in galena-tetrahedrite-chalcopyrite assemblages too in which native gold also appears. Detailed analyses by electron microprobe are under way in order to clearly identify these micro-inclusions and to investigate the compositional variations of the host minerals.

The identification of such inclusions and also the variable composition of the host minerals may give a picture on the ore fluids composition and possible to its evolution.

[1] Marza I. (1999) *Univ. Press Cluj*, 485 p. [2] Iancu & Kovacs (2010) *Acta Min.-Petr.*, Field Guide Ser., **19**, 5-13. [3] Finály & Koch (1929) *Min. Mag.* **22**, 179.