SHEAR-ZONE RELATED ORES: A DIMENSIONAL APPROACH AND THEIR POSITION AMONG THE CLASSICAL ORE TYPES

1UDUBASA, G., 2UDUBASA, S. 1Geological Institute of Romania, Bucharest; 2University of Bucharest, Romania

In order to contribute to solve the dilemma of the shear-zone related ores (SZRO), i.e. are they epigenetic or syngenetic in a classical sense, it seems to be necessary to take into account also the size of the ore-bearing shear zones.The small sized shear zones (SSSZ, as earlier defined by the authors, 1998) are strongly related to metal redistribution and enrichment within sheared metamorphics containing metal protores. Thus it seems that no metal import is necessary for such an environment and SSSZ approach the syngenetic ore deposition, i.e. syn-shearing.The large scale shear zones (LSSZ) of many km length and hundreds of m width enable very complex processes to develop, including magma forming and ascension, extensive and pervasive alteration halos, and the ore deposition approaches an epigenetic model, with partial contribution of sheared rock as a source of metals.Putting on a circle the four major genetic processes of generating ores, i.e. magmatic, hydrothermal, metamorphic and sedimentary, the SZRO have their natural place between the hydrothermal and metamorphic ones. In such a fractal-like classification the SZRO occupy an a intermediate zone,as the porphyry coppers, the VMS and the Alpine type veins do. Examples are given for each type of considered ores. Noteworthy several SSSZ, were recognized in the Romanian Carpathians within strongly deformed,polyphase metamorphics involved in sharings of different ages. Some such ores were already exploited having local gold content as much as 100 ppm.