



MAGALI ROSSI

From France to Sweden



Project: **Critical Metals in Orogens (CMiO)**

Research topic: **Ocean & Earth Sciences**

Swedish Institution: **University of Luleå**

French Institution: **University of Savoie Mont-Blanc**

Dates of mobility: **23/05/2024 to 10/06/2024**

Program: **SFVE-A**

PRESENTATION

[Magali Rossi](#) is A/Prof at University of Savoie Mont-Blanc in France since 2007. Starting her career investigating fluid-rock interactions (fluid and mass transfer) related the alpine orogeny, she has then developed an interdisciplinary research related to ore deposits and mining activity. Currently her research activity relates to two main topics : the formation of orogenic ores , and the environmental heritage of former mining activities. She is involved in the [ANR CMiO 2024-2028](#) project focussing on Critical Metals in Orogens: how metamorphic and tectonic processes concentrate critical metals in the Earth's crust.

ACTIVITIES IN SWEDEN

Within the framework of ANR CMiO (Critical Metals in Orogens; PI B. Cenki, University of Montpellier), a new collaboration has started between the University of Montpellier (host institution for CMiO, B. Cenki), the University of Savoie Mont-Blanc (M. Rossi) and the University of Luleå (N. Jansson, A. Azim Sadeh, M. Warlo), to investigate critical elements (like Ga, Ge, In) mobility during orogenic processes. The CMiO project aims at revisiting existing Lead-Zinc(-Silver-Copper) ore-deposits from different crustal levels that have recorded various degrees of metamorphic and tectonic processes from the large tectonic-scale to the mineral-scale. Therefore, a focus was made on Volcanic Massive Sulphide deposits hosted in the Sveco-Carelian shield, which were metamorphosed and deformed under Paleoproterozoic high-grade metamorphic conditions during the Caldonian orogeny. A comparison will be made with sulphide deposits from the Caledonides to provide a transect across various lithostructural units. This mission has provided intense scientific discussion, especially among B. Cenki (University of Montpellier), M. Rossi (University of Savoie Mont-Blanc) and N. Jansson (Luleå Tekniska Universitet). Thanks to the SFVE-A 2024 mission, the scientific collaboration has started on very good grounds. If most rock samples collected in 2024 will be studied at Montpellier university (thin

section preparation, in situ geochemistry, geochronology...) and fully integrated in the CMiO project analytical protocols, some samples (such as those collected at the Boliden SAS and SGU core sheds) will first be studied at LTU to ensure novel common projects and long-term collaboration between the French and Swedish Universities. The participants of this mission envisage scientific exchanges and visits to each other universities for them or for students (PhD and/or Master students) to strengthen their scientific collaboration in the coming years. During our stay in Sweden, we have presented our research twice at the University of Luleå (23 May 2024) and at Boliden (3-4 June 2024).