



BÉNÉDICTE CENKI

From France to Sweden



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

Research topic: **Ocean & Earth Sciences**

Swedish Institution: **University of Luleå**

French Institution: **University of Montpellier**

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

Program: **SFVE-A**



PRESENTATION

[Bénédicte Cenki](#) is A/Prof at Montpellier University in France since 2010. Over the past two decades, she has developed broad research, teaching and analytical skills in the geology of metamorphic rocks (including petrology, mineralogy, geochemistry, petrochronology, structural geology and geodynamics). Her expertise allows her to tackle two major research questions in Earth Sciences:

i) How mountains build and collapse, and ii) Where to find critical minerals that are essential to the development of the green technologies at the core of emerging low-carbon societies. She is currently leading the [ANR CMiO 2024-2028](#) projet 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 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 Caledonian 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 core shed) 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).