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Leading mineral exploration geophysics in the Nordic countries through innovation

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Abstract

As energy transition accelerates, governments and research institutions are tasked to ensure a resilient, reliable, responsible, and sustainable sourcing of critical raw materials. Combined with ESG standards, innovation should become a new routine for many countries to retain their commercial interests while help in securing carbon neutrality as our world face major issues with the climate change. Unfortunately, and historically, until recently mineral exploration industry lacked to embrace innovation and stayed behind globally and more dominantly in the Nordic countries despite an endowed geological setting rich in a variety of commodities. In this presentation, we exemplify several geophysical hardware and how-to solutions developed in recent years under the EU-funded Smart Exploration and bridge this into recent machine-learning workflows practiced some Canadian endowed region namely the Halfmile lake in the Bathurst Mining Camp. We show how supervised deep-learning algorithm helped to point at a new target for VMS exploration outside a 3D seismic cube made where a historical seismic exploration work was done and led to the discovery of a deep target. We are also looking forward for potential collaborative works both in terms of science and upscaling experiments.