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High-resolution paleomagnetic and rock magnetic study from Kveithola trough mouth fans, North-western Barents Sea

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In the last decades, several geomagnetic paleosecular variation (PSV) for the past millennia, have been reconstructed from paleomagnetic and archeomagnetic data, in order to understand the variability of the geomagnetic field. PSV data from the Artic region could be of critical importance for geomagnetic field models. In particular, sedimentary sequences with suitable lithological character and good paleomagnetic properties may provide valuable empirical inputs for the reconstruction of the geomagnetic field variability over geological times.
In this work, we present a preliminary analysis of high-resolution paleomagnetic and rock magnetic measurements carried out on 4 sediment cores collected in glaciomarine silty-clay sequences from the continental shelf and slope of the Kveithola trough-mouth fan, on the continental margin of northwestern Barents Sea. This investigation has been conducted in the framework of the project CORIBAR, with the general aim of defining the timing and the paleoenvironmental changes linked to the last deglaciation.
The analyzed sediments are characterized by good palaeomagnetic properties, carry a well-defined characteristic remanent magnetization and have a valuable potential to reconstruct the paleosecular variation (PSV) of the geomagnetic field, including relative paleointensity (RPI) variations.
Moreover, the palaeomagnetic and rock magnetic trends have been correlated at high resolution with the previous data obtained from other cores collected in the same area and analyzed in the former SVAIS and EGLACOM projects. The new paleomagnetic and rock magnetic data allowed to refine reconstructions of geomagnetic field variation at high northern latitudes during the last 20 ka and provided a chronological framework to reconstruct the sedimentological and the paleoenvironmental evolutions for the continental margin of the NW Barents Sea during the main pulses of glaciers fusion and retreat.