

Mapping a West-Greenland Geological Boundary Using Seafloor Morphology

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Understanding the submarine environment around Greenland is critical for understanding the impacts of future changes in sea level on marine habitats and coastal infrastructures, as well as revealing the past physical processes that sculpted the landscape. Here we investigate the submarine signature of a geologic boundary between Precambrian basement and Cretaceous-Paleocene sandstone off the coast of Aasiaat, Greenland. The study builds upon previous research in Krawczyk et al., 2021, and uses new data from the Greenland Rising Project to compare geologic maps, analyze bathymetry data, and examine backscatter measurements to help contribute to a better understanding of the boundary. Observations of exposed bedrock, and our interpretation of pockmarks observed on the seafloor guide the location of the boundary and suggest that the boundary extends further south than previously recognised. Characterizing this boundary supports a better understanding of marine ecosystems in Greenland and can be valuable for future environmental management decisions. Further data collection and analysis are recommended to better determine and identify the boundary in the future.