

Pilot study of the $^{40}\text{Ar}/^{39}\text{Ar}$ dating of ice-rafted basalt clasts as indicators of source areas in the Arctic and North Atlantic Oceans

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Abstract - We request funds to measure $^{40}\text{Ar}/^{39}\text{Ar}$ (K/Ar) ages of ice rafted basalt clasts as a tracer of their sources. Ice rafted debris (IRD) is lithogenic material that is transported by drifting ice in the form of icebergs and sea ice from the continental margins across the polar oceans. The study of ice rafted debris is a very powerful method for paleoceanographic and paleoclimatic reconstructions because:

- 1) The presence of IRD in marine sediments outlines the presence of ice sheets on the continents, or alternatively sea ice, and helps to define the geographic extent of drifting ice in the past.
- 2) The composition of IRD reveals the origin of the ice (and icebergs) and thus the iceberg drift tracks and surface currents.