

## Trace element analysis of individual detrital carbonate (Heinrich) grains

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North Atlantic subsurface sediments are punctuated by intervals rich in ice rafted debris (IRD). In particular, Hudson Strait Heinrich Layers deposited during MIS 3-2 are among the most prominent of IRD events since Northern Hemisphere glacial inception. Hudson Strait-derived material is distinguishable from other sources of North Atlantic IRD by a Paleozoic dolomitic limestone component with highly depleted  $\delta^{18}\text{O}$  and relatively low Sr content. Here we compare trace element composition of individual detrital carbonate grains from H1, H2, H4, H5 to grains from the 8.1, 8.2, and 8.3 (MIS 8) Heinrich Events. We also compare detrital carbonate grain concentration data to common proxies for Heinrich Layers over the past three glaciations. The Sr/Ca ratio of bulk sediment correlates best with coarse ( $>150\ \mu\text{m}$ ) detrital carbonate grain concentration. Variable and heterogeneous Mg content within individual grains indicates dolomitization likely occurred along microfronts. The MIS 8 grains are geochemically indistinguishable from the MIS 3-2 grains, suggesting a similar provenance. These results indicate that the MIS 8 IRD events were in fact Hudson Strait Heinrich Events.