

Pilot study of the K/Ar in Holocene and glacial wind blown dust and potential source areas

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Abstract - We request funds to measure the K/Ar ages of wind blown sediments as a tracer of their sources. Dust contents of the ice cores during glacial times are more than 10 times higher than the Holocene and other interglacial intervals. While the mechanisms of increasing dustiness and the effects of greater dustiness are not fully understood, a first step is to evaluate the sources that are contributing. Biscaye and colleagues have made some very influential discoveries concerning the sources of dust in the ice cores (e.g., Grousset et al., 1992; Basil et al., 1997; Biscaye et al., 1997; Svennson et al., 2000), and they have made great progress in evaluating wind blown sources with mineralogy and Nd-Sr-Pb isotope analyses. They have a large collection of "potential source areas". We would like to add the K/Ar system to this set of tracers, and we would like to find records in the middle and low latitudes that are dominated by eolian detritus. Due to the exploratory nature, the proposed pilot study is necessary for us to have any hope of obtaining funding in this time of low success at NSF.