



FALL 2012 SEMINAR SERIES

DEPARTMENT OF OCEAN, EARTH, AND ATMOSPHERIC SCIENCES
3PM – ROOM 200 IN THE OCEANOGRAPHY/PHYSICS BUILDING
THURSDAY OCTOBER 11th, 2012

“DID IRON CAUSE A DEGLACIAL PRODUCTIVITY SPIKE IN THE NORTHWEST PACIFIC?”

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ABSTRACT

The sources of iron to the modern, iron-limited Northwest Pacific are dust deposition from Asian loess and iron transported from the nearby volcanic continental margin. Lithogenic material from these two sources of iron are characterized by distinct Nd and Sr isotopic compositions. The provenance of lithogenic material, and thus iron, can be reconstructed with these isotopic systems. A strong and pervasive productivity peak has been observed in cores around the North Pacific during the Bølling-Allerød warm period of the last deglaciation, around 14 ky ago. It has been hypothesized that this peak may have been caused by an influx of iron from the continental shelves as they were flooded during the deglaciation. Here, we measure multiple proxies of productivity and detrital provenance in a single core from the Western Subarctic Pacific to directly examine the hypothesis that the productivity peak during the Bølling-Allerød warm period was caused by the deglacial flooding of continental shelves.

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