

## ESTABLISHMENT OF A PRELIMINARY PROXY FOR SILICA CYCLING IN SURFACE OCEANS

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To date, there is no proxy for measuring silica cycling in paleo-oceans. This is a significant gap, in that silica can act as a limiting nutrient for diatoms during the peak producing season.

Furthermore, rates of paleo-silica cycling can be utilized to determine past production levels of diatoms. Comparing these presumed paleo productions to current trends can yield useful predictions for the future. This study intends to extrapolate a proxy for paleo silica levels from a Southern Ocean core (PS58-254). The Southern Ocean is chosen for clear record of glacial cycles, and high abundance of diatomaceous opal. A proxy is hereby created comparing morphological change in dissolving cultured diatoms to known loss of silica. The species chosen for analysis is *Thalassiotrix antarctica*. While this species is not overly abundant in sediments, it is continually present in open ocean environments and sediments. The experiment involves the dissolution of diatoms in  $f/2$  standard artificial sea water over heat. The suspension of diatoms and dissolved silica is sampled at regular intervals and analyzed for silica concentration. Corresponding morphological change and loss of surface area in the diatoms themselves is measured via SEM. This poster presents the initial results from analysis of PS58-254.

POSTER