Geophysical Research Abstracts,
Vol. 10, EGU2008-A-04710, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-04710
EGU General Assembly 2008

Do opal and calcite enhance the flux of organic carbon from the photic zone?

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The downward flux of particulate matter from the photic zone to the oceans interior (export production) is an important component of the global carbon cycle. In the deep ocean statistically significant correlations between the downward fluxes of organic carbon and the biominerals opal and calcite may suggest that the downward flux of organic matter is regulated by the downward flux of biominerals (the ballast hypothesis). In the upper ocean a paucity of data prevents us from determining the potential role of biominerals in an analogous manner. We measured the production (using radiotracers) and export (using ^{234}Th deficits) of opal, calcite and organic carbon at 10 stations in the Iceland basin during summer 2001 and will use the data to evaluate the hypothesis that an efficient export of organic matter is associated with an efficient export of biomineral phases, as we have previously demonstrated in the subtropical Atlantic using observations made on an Atlantic Meridional Transect.