

## Decadal changes in ocean chlorophyll Caused by variations in penetration depths of oceanic convection in winter ?

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During the last decades a decrease of ocean chlorophyll was observed in the northern high latitudes by comparing data from the Coastal Zone Color Scanner (CZCS, 1979-86) with Sea-viewing Wide Field-of-view Sensor (SeaWiFS, 1997-2000) records (Gregg and Conkright, 2002). Simultaneously, a decrease of penetration depths of oceanic convection in Winter was observed. Based on our hypothesis on the strong relationship between oceanic convection and primary production (Wehde 1996, Backhaus et al., 1999, 2003, Wehde 2001), i.e., the support of production by oceanic convection in winter, we postulate, that it is the decrease of the strength of oceanic convection which causes the decrease in ocean chlorophyll. In support of this a coupled phytoplankton convection model and a phytoplankton mixed layer model were applied for the northern North Atlantic. A statistical analysis of model results will be presented and the model results will be compared with the records from the CZCS and the SeaWiFS Sensors.

## References

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