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Carbon time series at Ocean Weather Station M

I. Skjelvan

Bjerknes Centre for Climate Research/Geophysical Institute, University of Bergen , Norway
(ingunn.skjelvan@gfi.uib.no/fax: +4755584330)

Here we present results from a relatively new carbon time series at Ocean Weather Station M in the Norwegian Sea, a site which has been in action for meteorological and hydrographical purposes for nearly 60 years. Inorganic carbon in the whole water column (0 to 2000 m) is determined monthly, and the results indicate that the area is a decreasing sink for atmospheric carbon in concert with results from Olsen et al. (2006) and in contradiction to what is previously suggested by e.g. Orr et al. (2001). The data also show a small increase in the deep water carbon, of which about 10% is of natural origin (remineralisation) and the rest has anthropogenic sources. An extended multi-linear regression method has been used to determine the anthropogenic carbon content in these waters and the outcome of this is to a large extent verified by the observations.

References: Olsen, A. et al., Magnitude and origin of the anthropogenic CO₂ increase and ¹³C Suess Effect in the Nordic Seas since 1981, GBC, 2006. Orr, J.C. et al., Estimates of anthropogenic carbon uptake from four three-dimensional global ocean models, GBC, 2001.