SO_DYFAMED Time Series - 1991-> ...

JC. MARTY : head of mission and project leader

PIGMENTS HPLC : JC. MARTY

METHOD | PUBLICATIONS | FIGURES

(get data set in excel file format :)

METHOD FOR HPLP PIGMENTS ANALYSIS

Water for pigment analysis (2 liters) was filtrated on 25 mm Whatman GF/F glass fiber filte frozen and analyzed by HPLC within 3 months. Filters were ground and sonicated in 3-ml met under dim light conditions. The method used until 1993 was derived from that of Mantoura ar The general procedure for HPLC pigment analysis, identification and quantification has been de *al.*, 1994 a,b). With the separation system used (RP-C18), a partial resolution of divinyl-chlor from chlorophyll *a* (Chl *a*) has been achieved. For samples from 1994 and later, the separatio C8) is described in Vidussi *et al.* (1996), and the resolution between DV Chl *a* and Chl *a* has bee

The continuity of the set of data was obtained by the utilization of an internal standard (β-apo each sample in the extraction solvent. The possible effect of the change of analytical met analyzing the same samples with the two procedures. The agreement between the two method of the same order than the agreement between 2 analyses of the same sample using the sam attention was given to the quantification of DV Chl *a*, which is fully resolved from Chl *a* in the experiment. Although partial, the separation of these two compounds in the first phase of our for a good matching of the data from the two methods (equivalent to other pigmen concentrations of DV Chl *a* (below 5 ng l^{-1}) not detected in the first method.

Results are reported in terms of Chl *a*, divinyl-chlorophyll *a* (DV Chl *a*) and Total Chl *a* (TChl *a* = Chlorophyll *b* (Chl *b*) and divinyl-chlorophyll *b* (DV Chl *b*) not resolved with the first sepa partially resolved by the new one, are presented together as TChl *b*. Lutein and zeaxanthin we using the method of Vidussi *et al.* (1996), but data are presented as the sum of the two cor was only occasionally detected and always at very low levels with respect to zeaxanthin. The zeaxanthin can be considered as essentially zeaxanthin.

Chlorophylls and carotenoids were detected and quantified by absorbance at 440 nm. Identi was performed by comparison of on-line collected absorption spectra with those of a library of from standards and reference cultures obtained from the Villefranche sur mer culture colle carotenoids used for the calibration of the HPLC [peridinin (peri), alloxanthin (allo), fucoxanthi (zea), 19'-hexanoyloxyfucoxanthin (19'HF), 19'-butanoyloxyfucoxanthin (19'BF)] were provide part of a JGOFS intercalibration exercise. Chlorophyll a and chlorophyll b were from Sigma Array detection was achieved on selected samples until 1993 (Waters 991) and on all samp 1100).

A range of phytoplankton pigments has been detected, in order to characterize different phyt

recent review of taxonomic pigments can be found in Jeffrey (1997). Divinyl-chlorophyll *a* is th prochlorophytes whereas Chl *a* is the universal descriptor of other phytoplankton taxa. characterizes diatoms and peridinin (peri) dinoflagellates. Nano- and pico-flagellates containir characterized by 19'-hexanoyloxyfucoxanthin (19'HF, prymnesiophytes) and by 19'-buta (19'BF, chrysophytes and pelagophytes). Zeaxanthin (Zea) is the marker of cyanobacteria but prochlorophytes.

All data are available through the DYFAMED Observatory data base vlfr.fr/jgofs2/sodyf/home.htm .

Contour maps were obtained using Surfer program (Golden software Inc.) and Kriging method.

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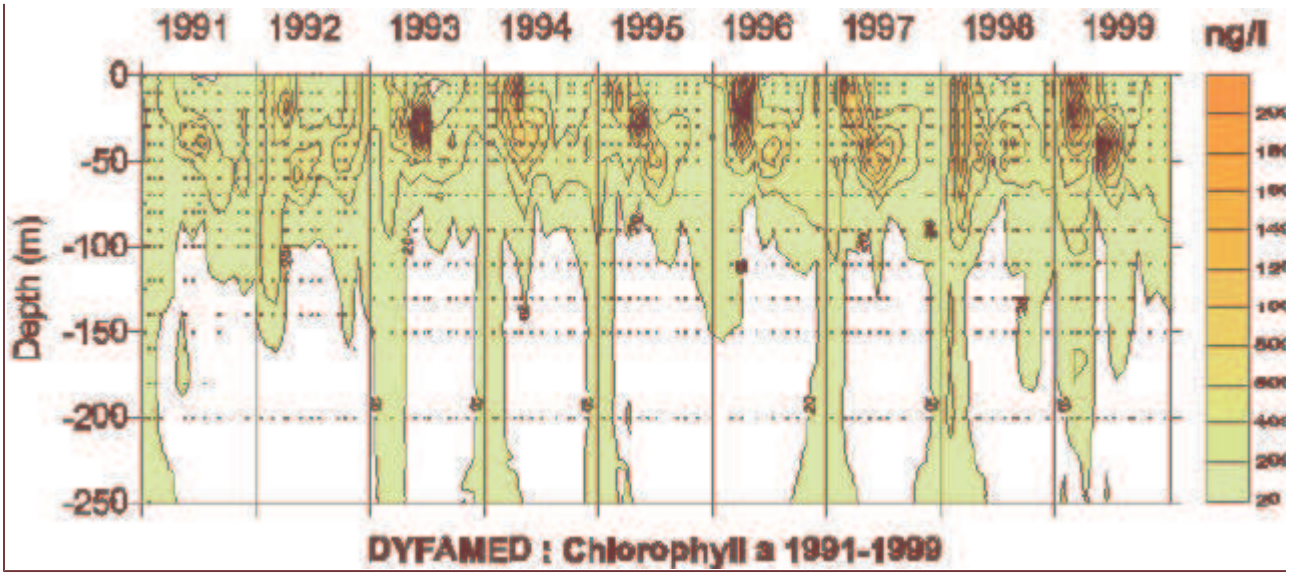
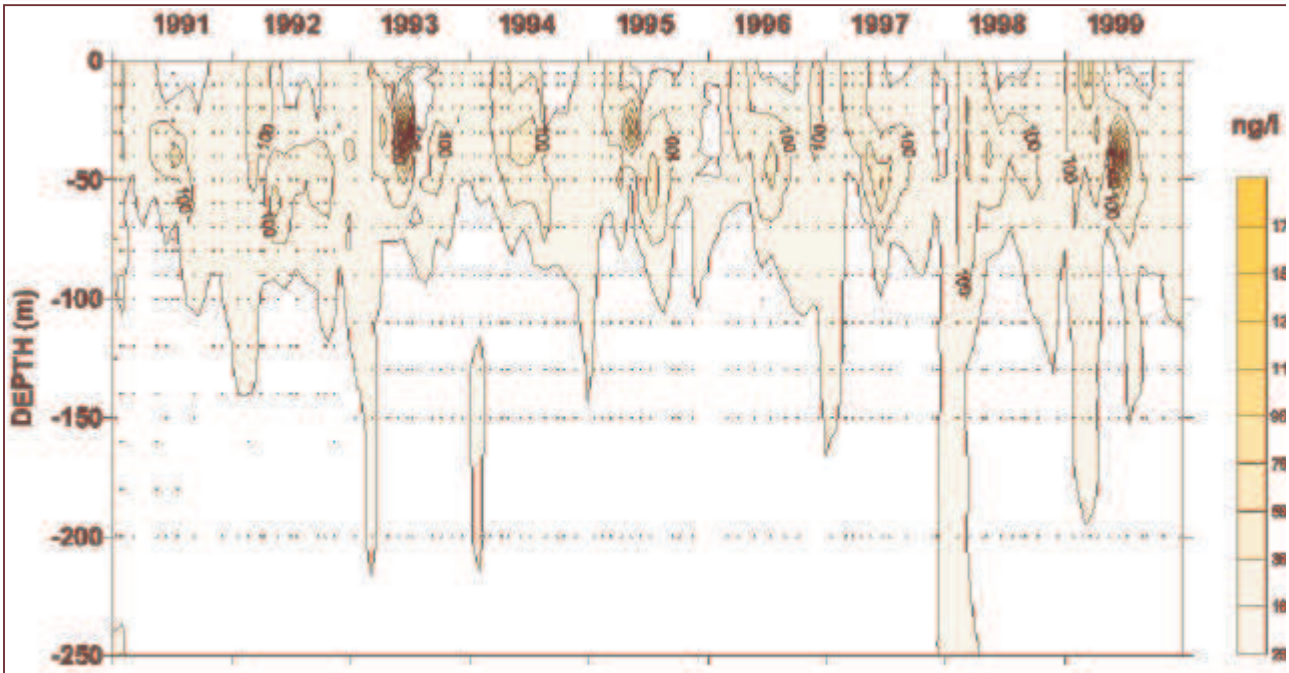
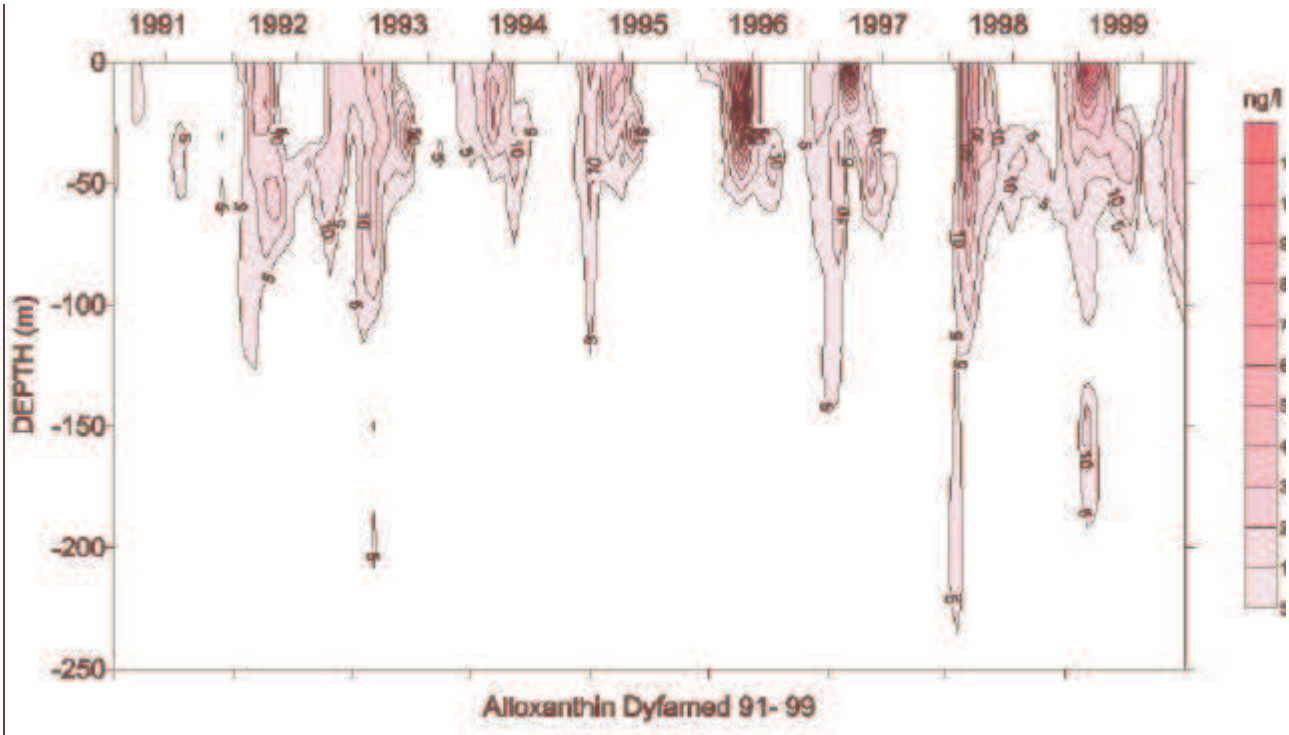
FIGURES



DYFAMED : Chlorophyll a 1991-1999



19' Hexanoyloxyfucoxanthin Dyfamed 91-99


1991
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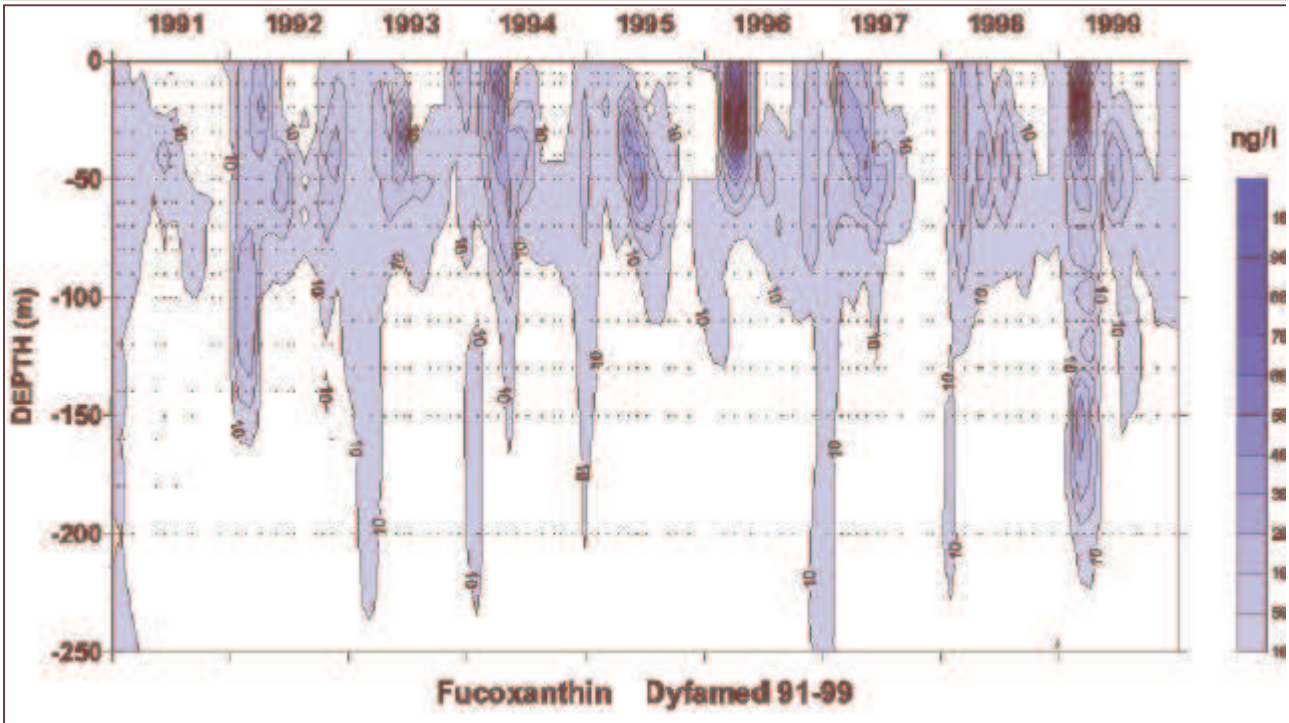
DEPTH (m)
ng/l
Alloxanthin Dyfamed 91- 99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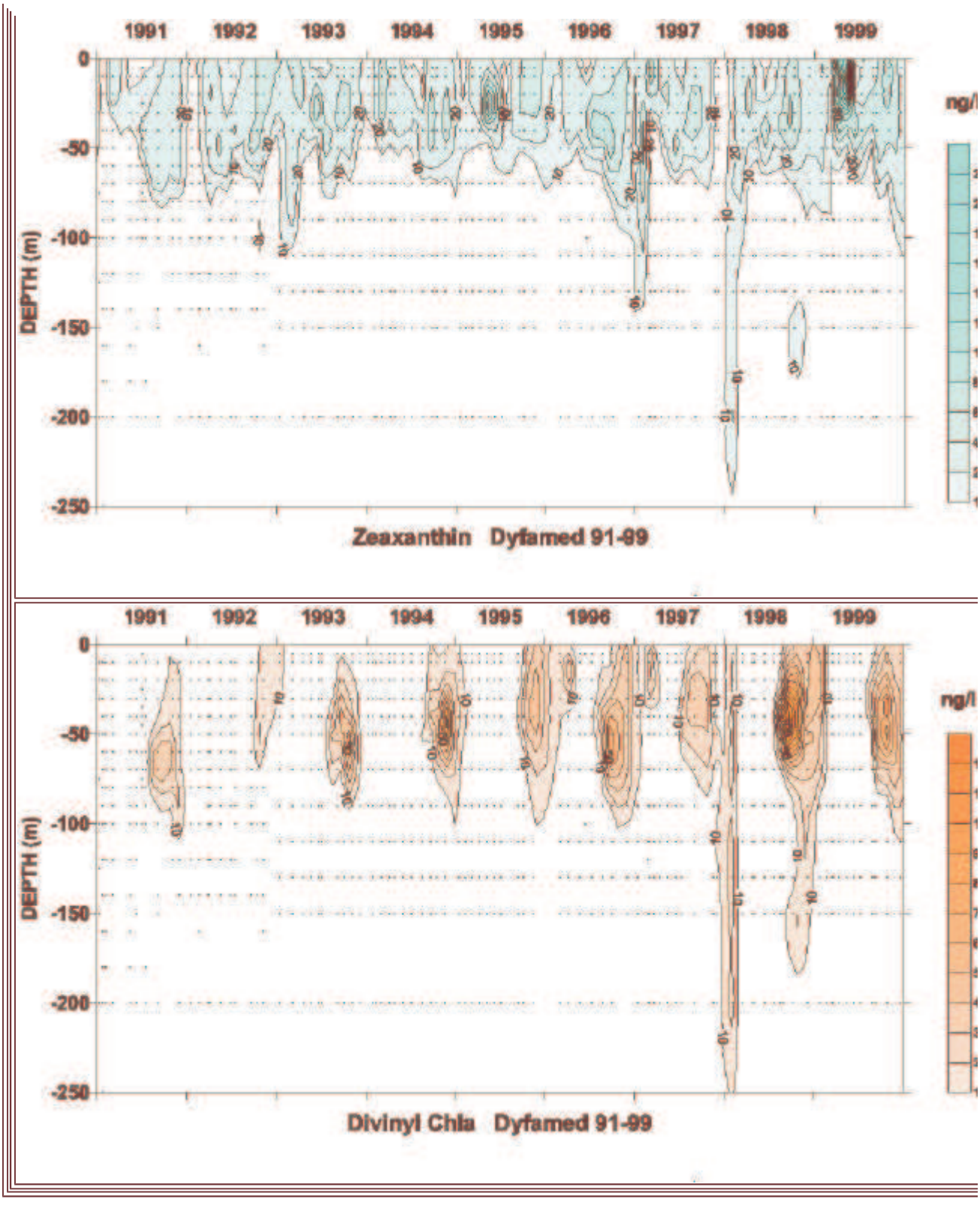
Fucoxanthin Dyfamed 91-99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DEPTH (m)
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Zeaxanthin Dyfamed 91-99
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DEPTH (m)
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Divinyl Chla Dyfamed 91-99