

**FRANKLIN CRUISES FR 8/90, 5/92 AND 8/93
DATA DOCUMENTATION
JGOFS WESTERN EQUATORIAL PACIFIC PROCESS STUDY**

[1] General:

Parameter: Sediment trap fluxes of chlorophyll and phytoplankton pigments.

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List of Parameters: chlorophyll c3 (chl c3),
chlorophyll c1+c2 (chl c1+c2),
19'- butanoyloxyfucoxanthin (but-fuco),
19'- hexanoyloxyfucoxanthin (Hex-fuco),
diadinoxanthin (Diadino),
zeaxanthin (Zeax),
chlorophyll b+divinyl chlorophyll b (chl b + DV chl b),
chlorophyll a + divinyl chlorophyll a (chl a + DV chla),
B,e-carotene (B,e-car)

List of Units: ugL^{-1} (water samples)
 $\text{ug.m}^{-2}.\text{d}^{-1}$ (sediment trap samples)

[2] Sampling:

Gear: Knauer type polycarbonate sediment traps, 8 traps per depth arranged on a rosette.

Standard Depths: 140 and 800 metres

Chemicals used: Traps filled with high density salt (NaCl) solution.

Special Procedures: Samples were collected on GF/F filters per depth for pigment analysis. The pigment samples were stored in liquid nitrogen until analysis.

3] Analysis:

Instrument: Waters HPLC, comprising comprising a 600 controller, 717 plus refrigerated autosampler and a 996 photo-diode array detector.

Method: See Wright et al. (1991) Marine Ecology Progress Series, 77, 183-196.

Precision: Coefficient of variation of 2%. Detection limits for all pigments between 0.005 and 0.01 $\mu\text{g l}^{-1}$.

Comments: Pigment fluxes for sediment trap samples are determined using the average weight of material

collected in traps at the same depth and for the same deployment.

[4] Results:

Quality of Data:

FR08/93 data presented of good quality.

Known Problems:

Density interfaces in all traps were >50% of tube length except at Deployment 5 (5°N, 155°E) where the density interface was between 25% and 50% of the tube length. This reduction in the density solution interface is believed to have occurred during recovery when the traps were recovered through the propeller wash.

[5] Brief description of analytical method:

Wright, S.W.; S.W. Jeffrey, R.F.C. Mantoura, C.A. Llewellyn, T.Bjornland, D. Repta, and D. Welschmeyer. Improved HPLC method for the analysis of chlorophylls and carotenoids from marine phytoplankton. Marine Ecology Progress Series 77, 183-196, 1991.

[6] Comments: