# SO_DYFAMED Time Series - 1991-> ...

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**HYDROLOGY** : **J. CHIAVERINI**

**DATA set** | **METHODOLOGY** | **FIGURES**

| | Info | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CTD O2**<br>**Fluo**<br>**(1993-..)** | Méthodes | | | | | | | | | |

| | Info | 2001 | 2002 |
|---|---|---|---|
| **CTD O2**<br>**Fluo.** | Méthodes | | |

NB : headers are present from year 1998.

## CTD Methodology

Le matériel utilisé consiste en un ensemble « carrousel » (SBE32, Sea-Bird Electronics) et sonde (SBE9plus, Sea-Bird Electronics), reliés par un câble électroporteur à une unité de pont (SBE 11 Carousel Deck Unit, Sea-Bird Electronics). Le « carrousel » est constitué d'un support contenant 12 bouteilles de prélèvement (type Niskin) de 12 litres chacune
Le premier profil hydrologique est réalisé jusqu'à 2 000 m (le fond est à 2 300 m). La collecte des échantillons est effectuée à la remontée à dix profondeurs de 2000 à 300 m.

Le deuxième profil concerne la couche 0-200 m, douze profondeurs sont

Two CTD casts were obtained from each cruise, one for the 0–200 m layer, and the other for the 0–2000 m layer. From 1991 to 1993, the CTD system was a Sea-Bird SBE 9 underwater unit. Water for pigment (and other parameters) analyses was obtained using Niskin bottles from two hydrocasts performed between the two CTD casts. Since 1993 the CTD system consisted of a Sea-Bird SBE 911 *Plus* equipped with additional sensors (dissolved $O_2$ and fluorometer) mounted on a Sea-Bird rosette (SBE32 Carousel) equipped with twelve 12-l Niskin bottles.

**Sensors:**

- Pressure: Digiquartz with temperature compensation
- Temperature : SBE 3-02/F
- Conductivity: (flow through cell): SBE 4-02/0
- Pump: SBE 5T
- Dissolved O2: (flow through cell) : SBE 13-02

échantillonnées de 200 à 5 m.

Les fichiers de données brutes obtenues par la bathysonde sont traités de retour au laboratoire avec l'aide du logiciel seasoft (Sea-Bird Electronics) selon le processus standard préconisé. Les capteurs température et conductivité sont étalonnés annuellement. Les données d'oxygène dissous sont fournies seulement à titre indicatif, elles ne peuvent être utilisées telles quelles. Les utilisateurs doivent les retraiter à partir des données brutes (disponibles à la demande) et des valeurs discrètes provenant des analyses par la méthode de Winkler (page biogéochimie dans ce site).

(Beckman polarographic type) until 2002

- Dissolved O2 : SBE 43 (since 2003)
- Fluorescence: Aquatracka MKIII Chelsea fluorometer

**Calibration:** (routine procedure since 1999).

The temperature transducer and conductivity cell are returned to Sea-Bird each year for routine calibration. The membrane of the dissolved oxygen sensor was changed each year (SBE 13-02).

**Data collection**

The data acquisition is at 24 Hz frequency. The Sea-Bird deck unit averages these data to 1 Hz subsequently stored on the PC. Four files are saved for each cast:

- Daammjjx.hdr Header file, lat., long., time, …
- Daammjjx.dat Raw data file, binary
- Daammjjx.con Configuration file (all the calibrations for the cast)
- Daammjjx.bl Bottle file (record of parameters when each bottle is fired)

**With**

- D for Dyfamed
- aa for the Year
- mm for the Month
- jj for the Day
- x indicate the down cast (D, E, F..) or up cast (R,S,T)

Data Processing

Data processing is done back to the laboratory using the Sea-Bird software.

Cast processing :

*DATCNV : Converts raw data from input .DAT to engineering units and stores the converted data in .CNV files*

*ROSSUM (only for the up cast processing): Reads in the .ROS file and writes out a summary of the bottle data to a file (.BTL extension), and the bottle position data (.BL extension).*

*ALIGNCTD : Aligns temperature, conductivity and oxygen measurements in time relative to pressure.*

*LOOPEDIT : Apply a pressure filter which eliminates all scans for which the CTD speed is less than 0.25 $ms^{-1}$.*

DERIVE : Compute density, depth, potential temperature, salinity, oxygen from pressure, temperature and conductivity in the converted data files (.CNV extension).

*BINAVG : Averages data in converted data (.CNV extension) files to 2 m resolution (5m for 1991-1993).*

*STRIP : Output selected columns of data from the input converted data files*.

*ASCIIOUT : Output the header portion to a file (.HDR extension) and the data portion in ASCII engineering units to a file ( .ASC extension).*

Finally the files produced are as follow:

Daammjjx.hdr Header file, lat., long., time, meteorological observations…

Daammjjx.asc (or .xls) : Data file which report the following :

```
pr: pressure [db]

t090: temperature, ITS-90 [deg C]


flC: fluorometer, chelsea


depS: depth, salt water [m]


potemp090: potential temperature, ITS-90 [deg C]


sal00: salinity, PSS-78 [PSU]


oxML/L: oxygen [ml/l]


oxPS: oxygen, percent saturation
```

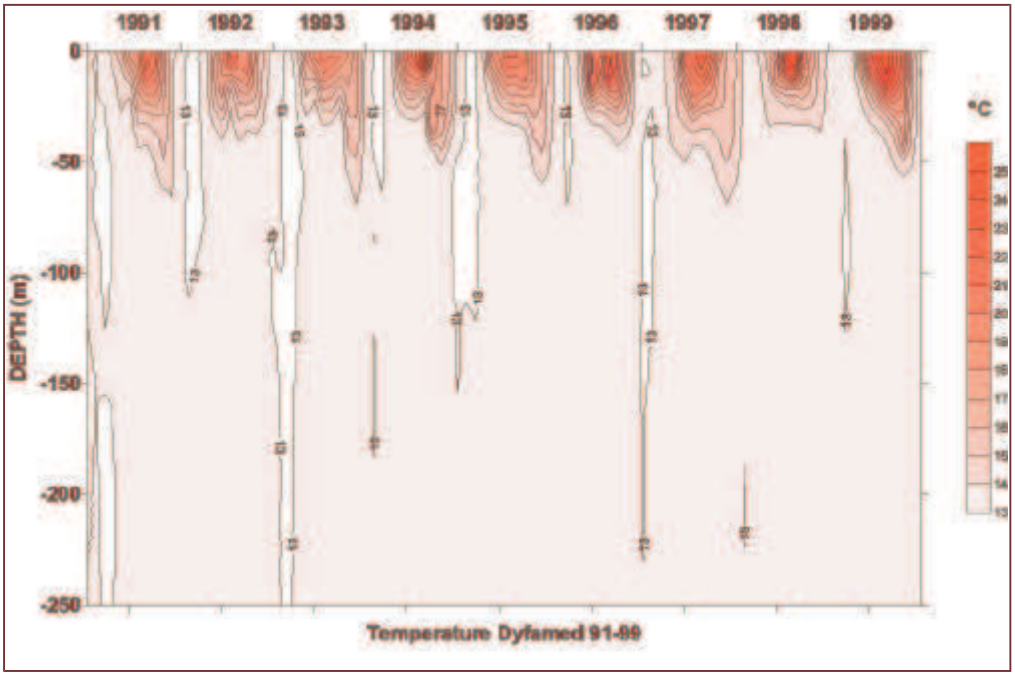
sigma-é00: density, sigma-theta [kg/m^3]

oxsatML/L: oxygen saturation [ml/l]

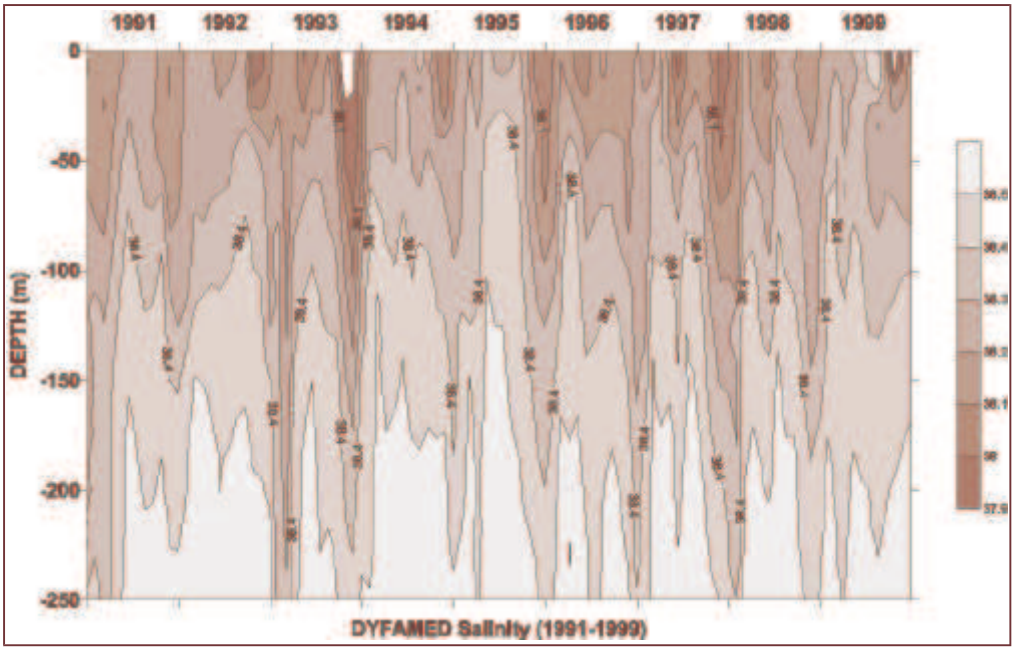
***References***:

Sea-Bird Electronics, Inc. CTD Data acquisition software manual.

## FIGURES




**TEMPERATURE**




**SALINITY**