

Dia 1

Estación 1 anclaje: ctd y botella **Anto**

Estación 4: ctd **Cris**

Estación 18: CTD **Vale**

Estación 19: CTD y Botella **Javi**

Estación 20: CTD **Benja**

Bongo y Rastra:

Dia 2

Anclaje a mirar

Estación 16: Botella oxígeno y sal y CTD

Estación 24: Botella y CTD

Estación 23: CTD

Estación: 22: CTD

Estación 21: CTD

Dia 3

Se saca el anclaje

Estacion 17: Botellas

Estacion 24 otra vez

Bongo y Rastra

****Hoff muller(?) en una transecta

Se podría comparar las dos veces que se midió en la estación 24

*** Descargar Open CPN

E212223 Tiene Estaciones agragadas a la costa



Tracks Son los movimientos que se hicieron cada día

ESTACIÓN 18

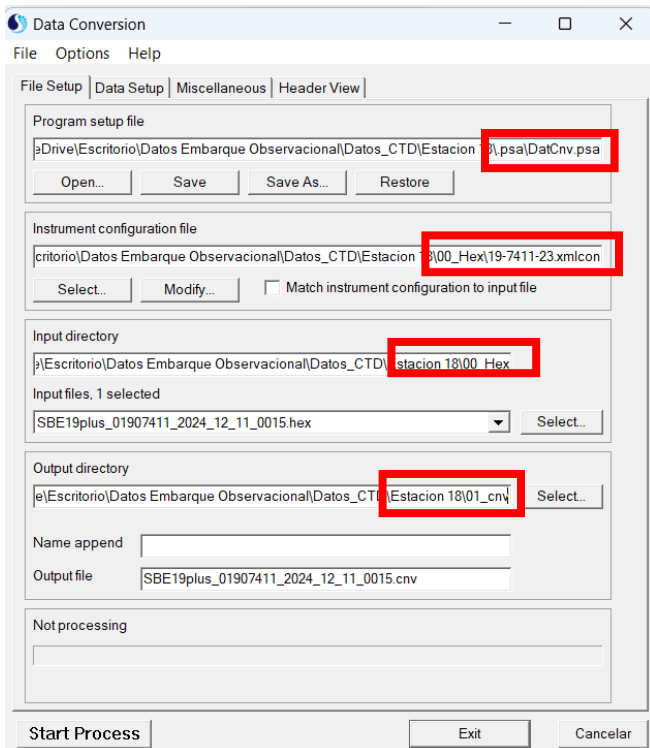
1) Generamos las carpetas donde se irán guardando los archivos

Nombre	Fecha de modificación	Tipo	Tamaño
00_Hex	16-12-2024 9:55	Carpeta de archivos	
01_cnv	16-12-2024 9:55	Carpeta de archivos	
02_Section	16-12-2024 9:56	Carpeta de archivos	
03_Filter	16-12-2024 9:56	Carpeta de archivos	
04_Align	16-12-2024 9:56	Carpeta de archivos	
05_CellThermalMass	16-12-2024 9:56	Carpeta de archivos	
06_LoopEdit	16-12-2024 9:57	Carpeta de archivos	
07_Derive	16-12-2024 9:57	Carpeta de archivos	
08_DeriveTheos	16-12-2024 9:57	Carpeta de archivos	
09_BinAvg	16-12-2024 9:58	Carpeta de archivos	
10_Split	16-12-2024 9:58	Carpeta de archivos	
.psa	16-12-2024 9:59	Carpeta de archivos	

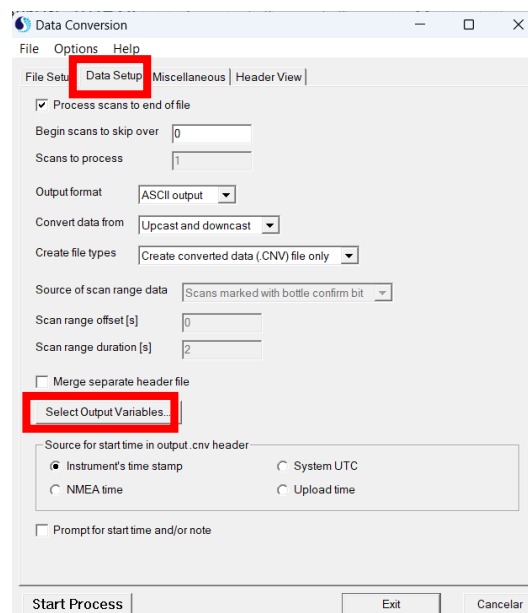
Los archivos para trabajar se encuentran en la carpeta **00_Hex**

 SBE19plus_01907411_2024_12_11_0015.hex	16-12-2024 9:35
 SBE19plus_01907411_2024_12_11_0015.xml	16-12-2024 9:35

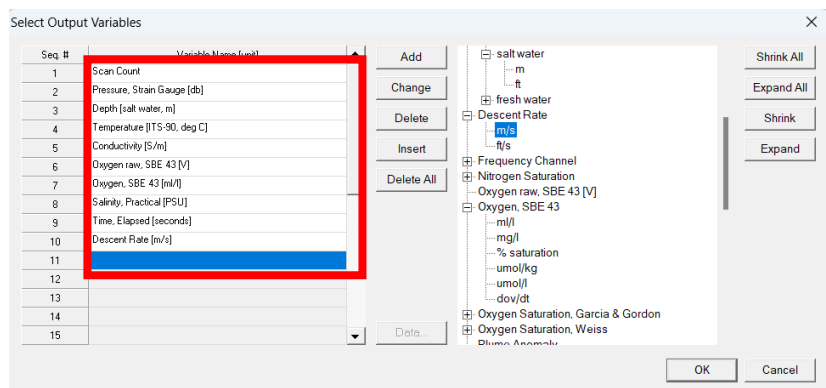
2) Hacemos la conversión de datos a .cnv y guardamos los resultado en **01_cnv**



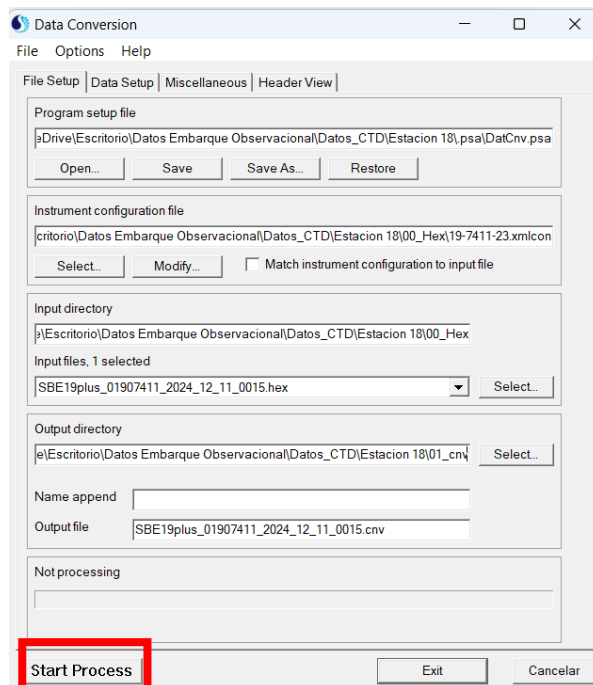
Además, elegimos las variables que se van a guardar en el archivo



De modo que estas fueron las variables elegidas



Y luego se procede finalizar el proceso

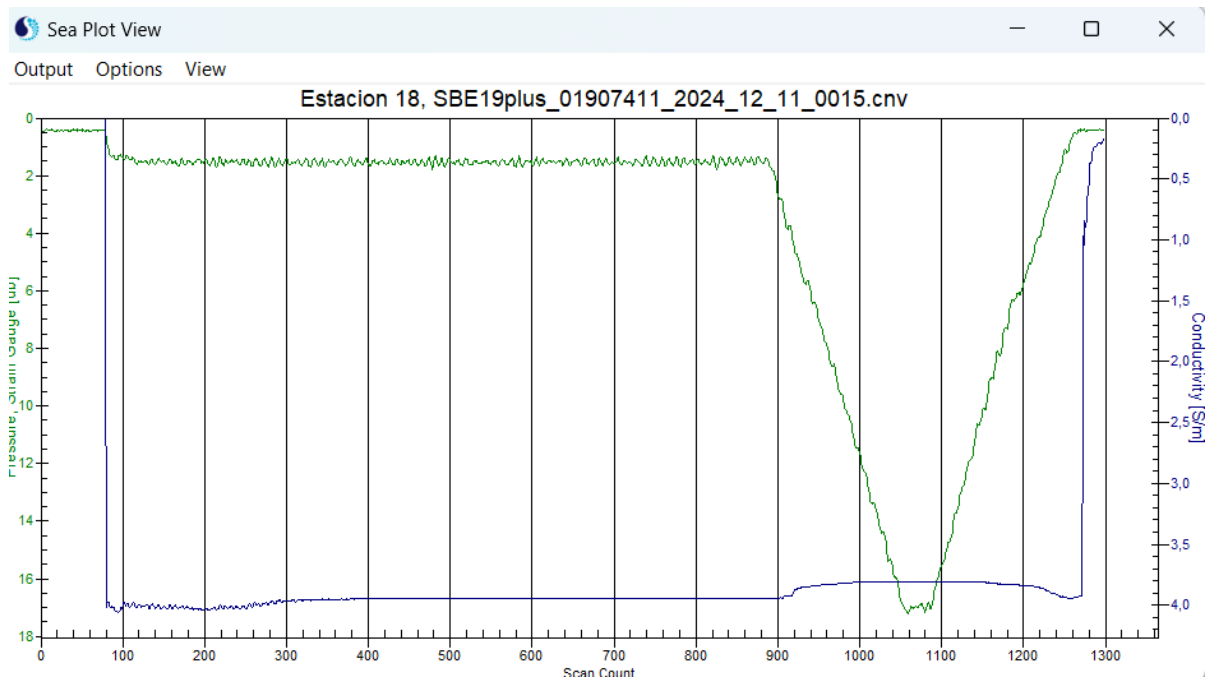
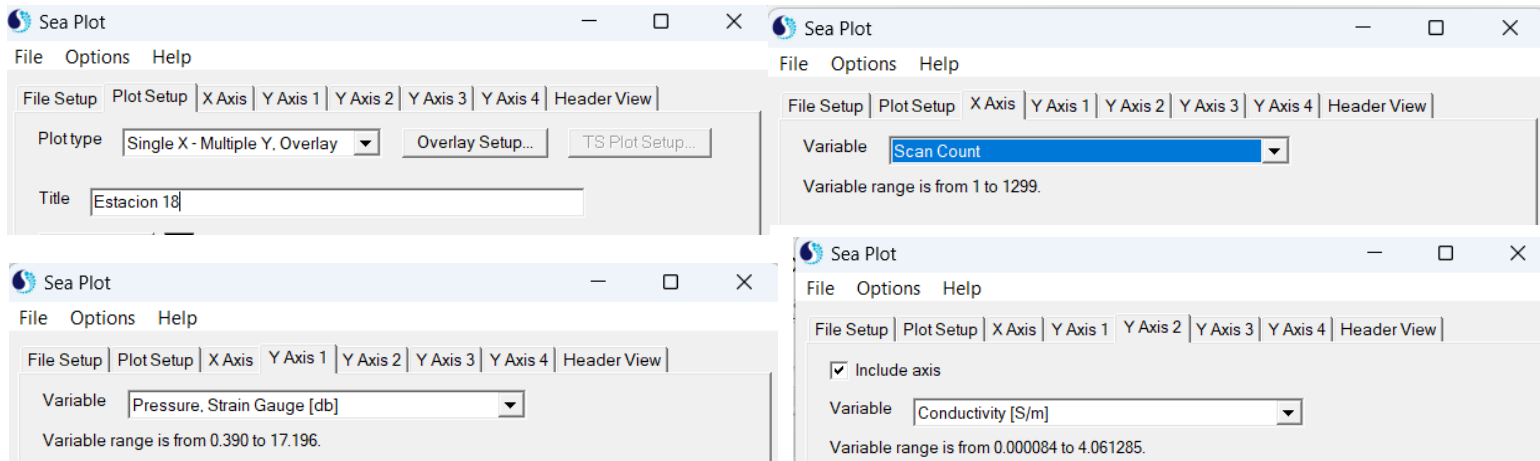


Luego el resultado para el archivo .cnv contiene toda la información como se ve a continuación:

```
* cast 15 11 Dec 2024 12:48:33 samples 179044 to 180342, avg = 1, stop = mag switch
*
# nquan = 11
# nvalues = 1299
# units = specified
# name 0 = scan: Scan Count
# name 1 = prdM: Pressure, Strain Gauge [db]
# name 2 = depSM: Depth [salt water, m], lat = 36.50
# name 3 = tv290C: Temperature [ITS-90, deg C]
# name 4 = c0S/m: Conductivity [S/m]
# name 5 = sbeox0V: Oxygen raw, SBE 43 [V]
# name 6 = sbeox0ML/L: Oxygen, SBE 43 [ml/l]
# name 7 = sal00: Salinity, Practical [PSU]
# name 8 = times: Time, Elapsed [seconds]
# name 9 = dz/dtM: Descent Rate [m/s]
# name 10 = flag: 0.000e+00
```

1	0.432	0.429	16.3131	0.000321	2.3400	5.7998	0.0090	0.000	-2.105e-16	0.000e+00
2	0.453	0.450	16.3142	0.000207	2.3398	5.7990	0.0086	0.250	0.006	0.000e+00
3	0.453	0.450	16.3164	0.000201	2.3408	5.8031	0.0086	0.500	0.010	0.000e+00
4	0.474	0.470	16.3188	0.000182	2.3410	5.8045	0.0086	0.750	0.018	0.000e+00
5	0.411	0.408	16.3211	0.000168	2.3410	5.8053	0.0085	1.000	0.007	0.000e+00
6	0.432	0.429	16.3232	0.000165	2.3402	5.8019	0.0085	1.250	0.003	0.000e+00
7	0.390	0.388	16.3246	0.000159	2.3410	5.8044	0.0085	1.500	-0.012	0.000e+00
8	0.432	0.429	16.3262	0.000151	2.3404	5.8018	0.0085	1.750	-0.014	0.000e+00
9	0.432	0.429	16.3275	0.000140	2.3401	5.7994	0.0085	2.000	-0.015	0.000e+00

3) Generamos un plot para confirmar como es que se está haciendo la medición



Al hacer un zoom notamos el punto en que baja y sube el CTD: **886** de bajada y **1265** de subida

4) Recortamos los datos

Section

File Options Help

File Setup **Data Setup** Header View

Program setup file
[Drive\Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\psa\Section.psa]
Open... Save Save As... Restore

Input directory
[e\Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\01_cnv]

Input files, 1 selected
[SBE19plus_01907411_2024_12_11_0015.cnv] Select...

Output directory
[Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\02_Section] Select...

Name append
Output file [SBE19plus_01907411_2024_12_11_0015.cnv]

Not processing

Start Process Exit Cancelar

Section

File Options Help

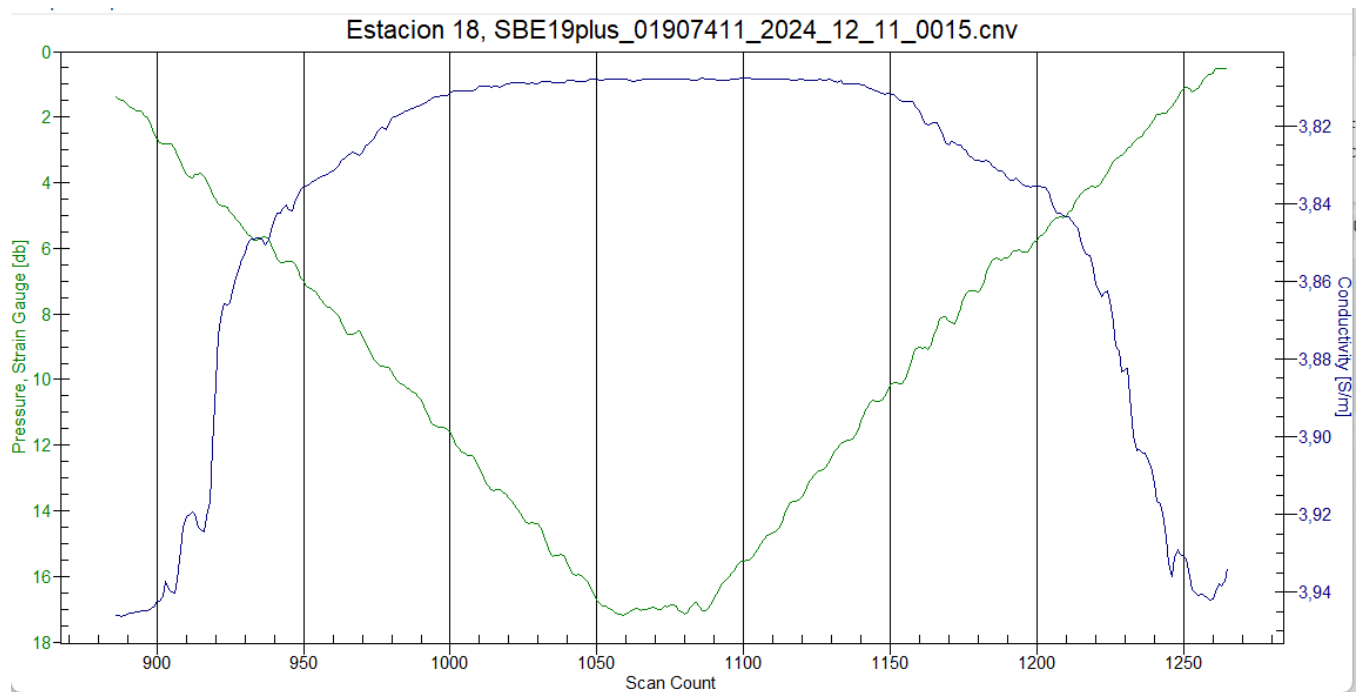
File Setup Data Setup **Header View**

Section based on [Scan count]

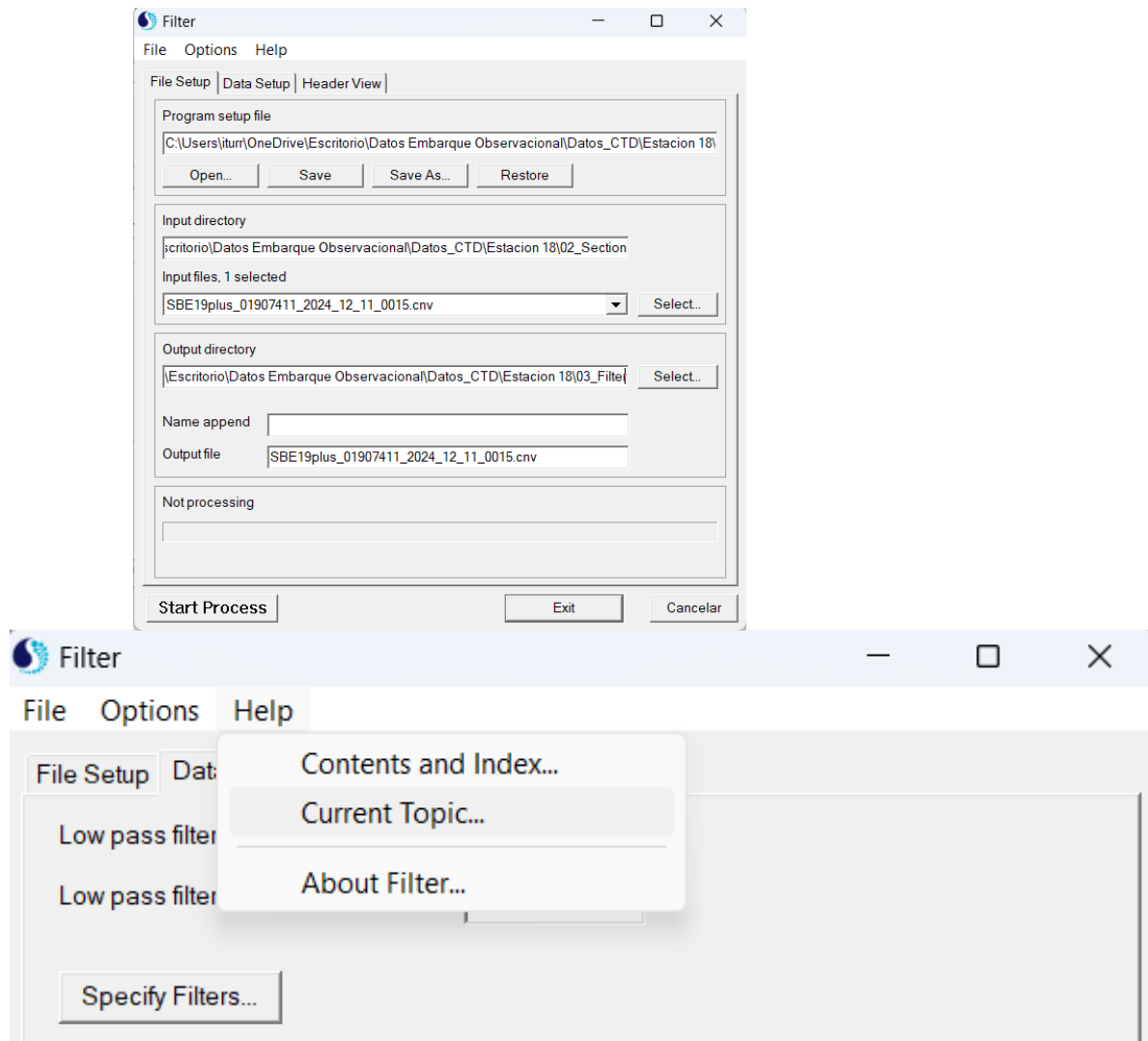
Pressure section cast [Downcast]

Minimum value [886]

Maximum value [1265]



5) Generamos Filter



Instrument	Temperature (seconds)	Conductivity (seconds)	Pressure (seconds)
SBE 9plus	--	--	0.15
SBE 19plus or 19plus V2	0.5	0.5	1.0
SBE 19 (not plus) with or without TC duct and pump	0.5	0.5	2.0
SBE 25 or 25plus	0.1	0.1	0.5
SBE 49 *	0.085	0.085	0.25

Filter [Minimize] [Maximize] [Close]

File Options Help

File Setup Data Setup Header View

Low pass filter A, time constant [s] 0.5

Low pass filter B, time constant [s] 1

Specify Filters...

Specify Filters [Close]

Variable Name [unit]	Filter Type
Pressure, Strain Gauge [db]	Low pass filter B
Depth [salt water, m]	Low pass filter B
Temperature [ITS-90, deg C]	Low pass filter A
Conductivity [S/m]	Low pass filter A
Oxygen raw, SBE 43 [V]	None
Oxygen, SBE 43 [ml/l]	None
Salinity, Practical [PSU]	Low pass filter A
Descent Rate [m/s]	None

Clear All

OK Cancel

6) Align CTD, nuevamente entramos a helo y vemos lo siguiente:

Instrument	Advance of Temperature Relative to Pressure (seconds)
9plus	0
19, 19plus, or 19plus V2	+0.5
25 or 25plus	0
49 *	+0.0625

Align CTD

File Options Help

File Setup **Data Setup** Header View

Program setup file
rive\Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\psa\AlignCTD.psa
Open... Save Save As... Restore

Input directory
\\Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\03_Filter

Input files, 1 selected
SBE19plus_01907411_2024_12_11_0015.cnv Select..

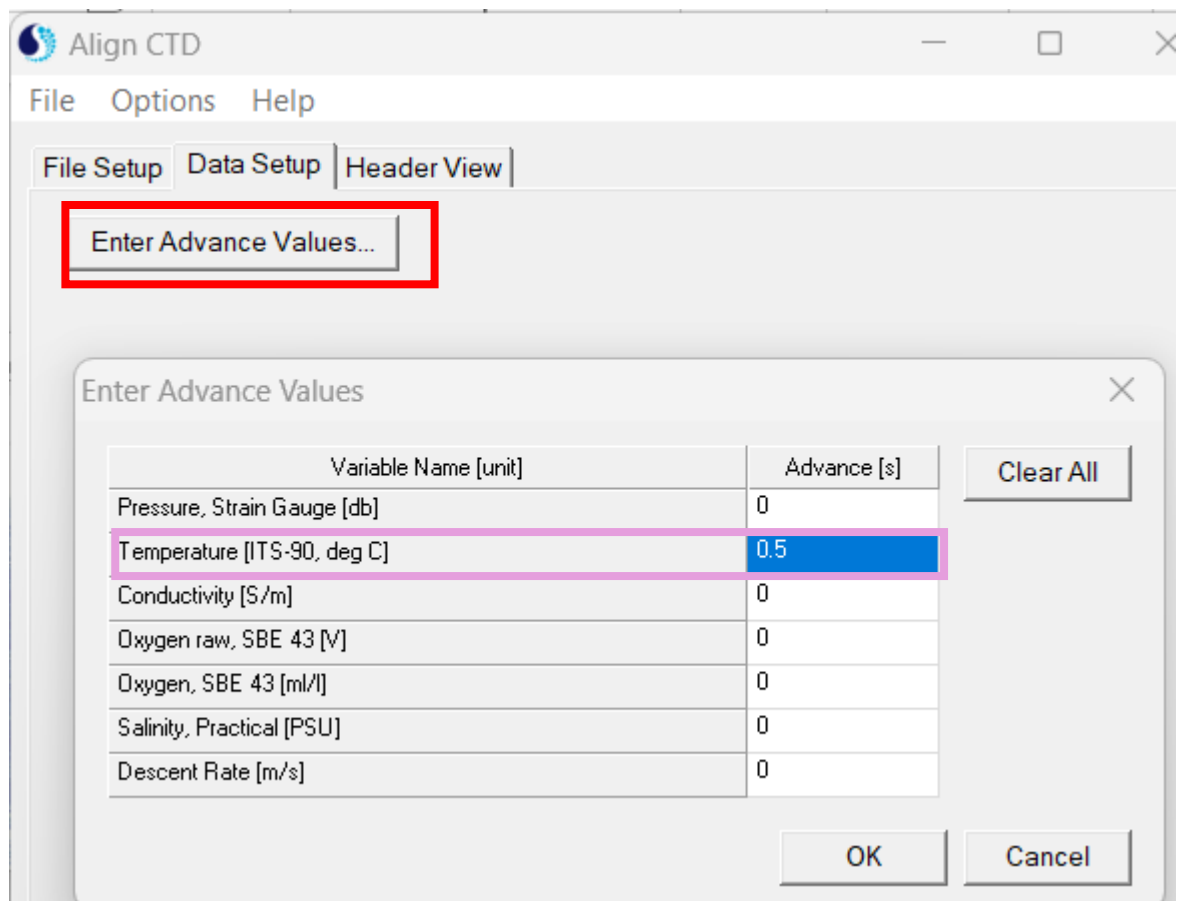
Output directory
\\Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\04_Align Select..

Name append

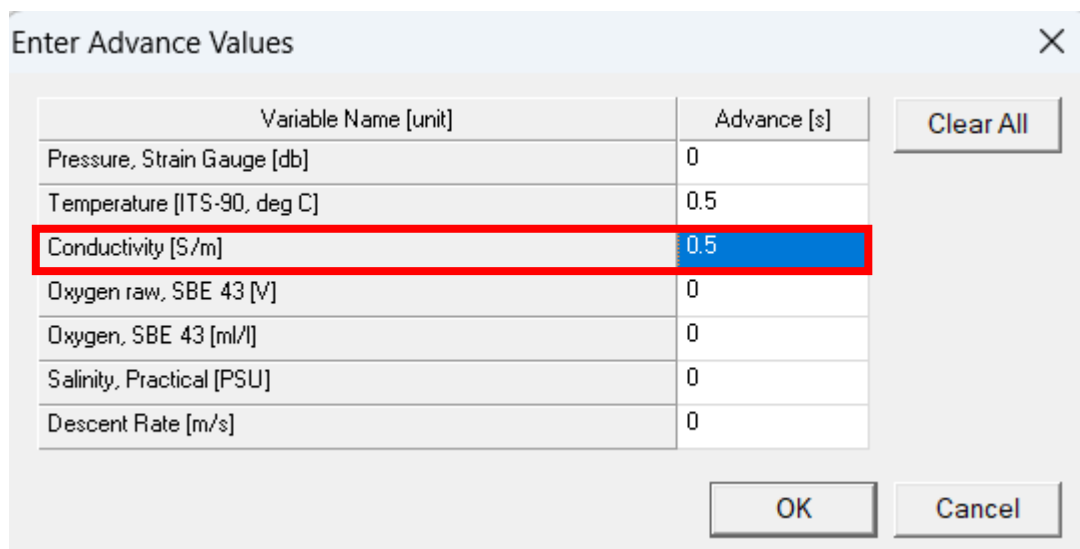
Output file
SBE19plus_01907411_2024_12_11_0015.cnv







Not processing

Start Process Exit Cancelar



Generamos distintos archivos cambiando la alineación de conductividad a 0.1 0.2 ... 0.5 y se van guardando



 SBE19plus_01907411_2024_12_11_0015	16-12-2024 11:37
 SBE19plus_01907411_2024_12_11_0015_1	16-12-2024 11:38
 SBE19plus_01907411_2024_12_11_0015_2	16-12-2024 11:38
 SBE19plus_01907411_2024_12_11_0015_3	16-12-2024 11:38
 SBE19plus_01907411_2024_12_11_0015_4	16-12-2024 11:39
 SBE19plus_01907411_2024_12_11_0015_5	16-12-2024 11:39

7) Derivamos salinidad

Derive

File Options Help

File Setup | Data Setup | Miscellaneous | Header View

Program setup file
C:\Users\iturn\OneDrive\Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\

Open...
Save
Save As...
Restore

Instrument configuration file
critorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\00_Hex\19-7411-23.xmlcon

Select...
Modify...
☐ Match instrument configuration to input file

Input directory
\Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\04_Align

Input files, 6 selected
SBE19plus_01907411_2024_12_11_0015_0.cnv
Select...

Output directory
\Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\04_Align

Select...

Name append
_Align

Not processing







Start Process
Exit
Cancelar

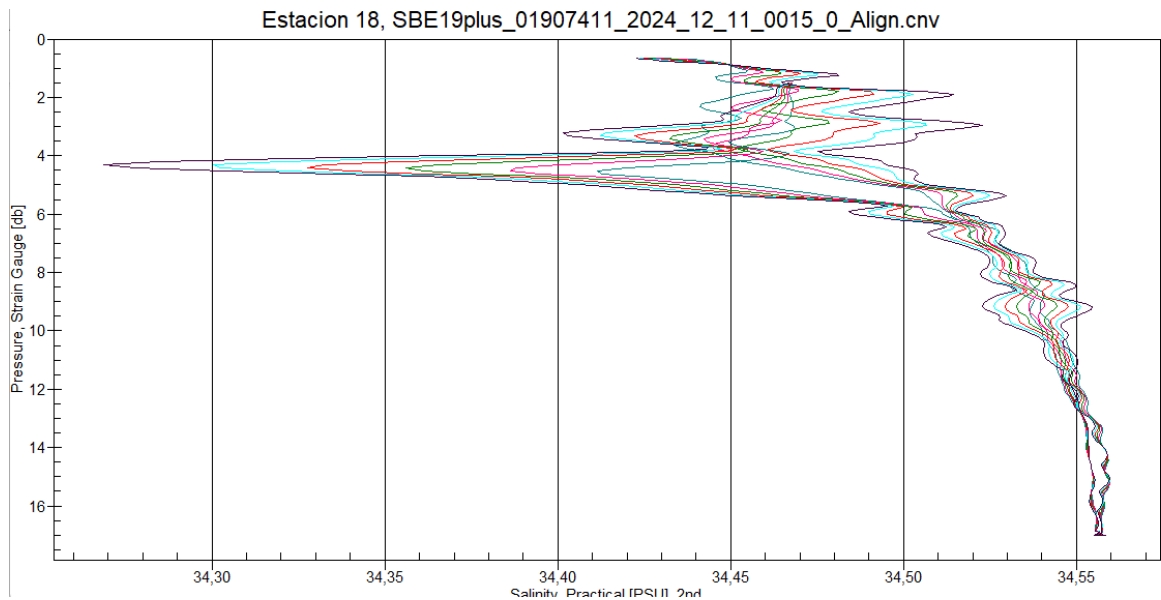
File Setup | Data Setup | Miscellaneous | Header View

Select Derived Variables...

Select Derived Variables

Seq. #	Variable Name [unit]
1	Salinity, Practical [PSU]
2	
3	

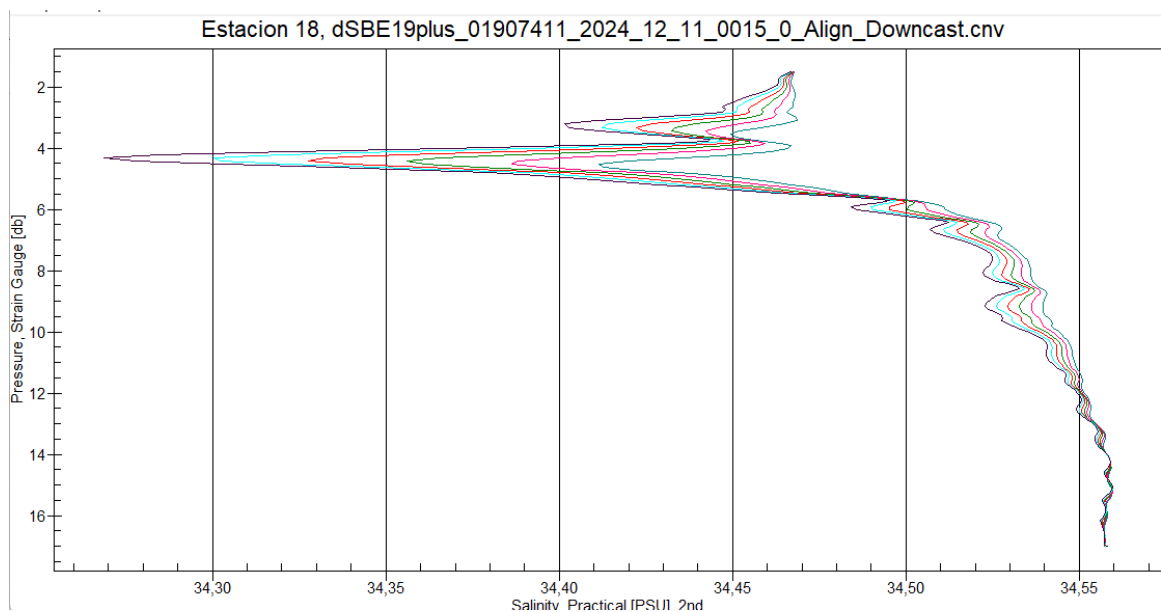
 SBE19plus_01907411_2024_12_11_0015_0_Align
 SBE19plus_01907411_2024_12_11_0015_1_Align
 SBE19plus_01907411_2024_12_11_0015_2_Align
 SBE19plus_01907411_2024_12_11_0015_3_Align
 SBE19plus_01907411_2024_12_11_0015_4_Align
 SBE19plus_01907411_2024_12_11_0015_5_Align
 SBE19plus_01907411_2024_12_11_0015_5
 SBE19plus_01907411_2024_12_11_0015_4
 SBE19plus_01907411_2024_12_11_0015_3
 SBE19plus_01907411_2024_12_11_0015_2
 SBE19plus_01907411_2024_12_11_0015_1
 SBE19plus_01907411_2024_12_11_0015_0



Si realizamos un **Split** para que se vean solo los datos de bajada y lo ploteamos resulta lo siguiente:

Hacemos esto con el fin de alinear el sensor de conductividad con la presión que corresponde.

La serie que estoy analizando no es necesario que sea desface pues da la menor cantidad de **SPIKES**



8) Alineamos el oxígeno

Enter Advance Values

Variable Name [unit]	Advance [s]
Pressure, Strain Gauge [db]	0
Temperature [ITS-90, deg C]	0.5
Conductivity [S/m]	0.1
Oxygen raw, SBE 43 [V]	2
Oxygen, SBE 43 [ml/l]	2
Salinity, Practical [PSU]	0.1
Descent Rate [m/s]	0

Clear All

OK

Cancel

9) Ksjdk

Cell Thermal Mass

File

Options

Help

File Setup

Data Setup

Header View

Program setup file

C:\Users\iturr\OneDrive\Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\

Open...

Save

Save As...

Restore

Input directory

Escritorio\Datos Embarque Observacional\Datos_CTD\Estacion 18\04_Align

Input files, 1 selected

SBE19plus_01907411_2024_12_11_0015.cnv

Select...

Output directory

atos Embarque Observacional\Datos_CTD\Estacion 18\05_CellThermalMass

Select...

Name append

Output file

SBE19plus_01907411_2024_12_11_0015.cnv

Not processing

Start Process

Exit

Cancelar

Typical values for alpha and 1/beta are:

Instrument	alpha	1/beta
SBE 9 <i>plus</i> with TC duct and 3000 rpm pump	0.03	7.0
SBE 19 <i>plus</i> or 19 <i>plus</i> V2 with TC duct and 2000 rpm pump	0.04	8.0
SBE 19 (not <i>plus</i>) with TC duct and 2000 rpm pump	0.04	8.0
SBE 19 (not <i>plus</i>) with no pump, moving at 1 m/sec	0.042	10.0
SBE 25 or 25 <i>plus</i> with TC duct and 2000 rpm pump	0.04	8.0
SBE 49 with TC duct and 3000 rpm pump *	0.03	7.0

File Setup

Data Setup

Header View

☒ Correct primary conductivity values

Temperature sensor to use

Primary

Thermal anomaly amplitude [alpha]

0.04

Thermal anomaly time constant [1/beta]

8

☐ Correct secondary conductivity values

Temperature sensor to use

Secondary

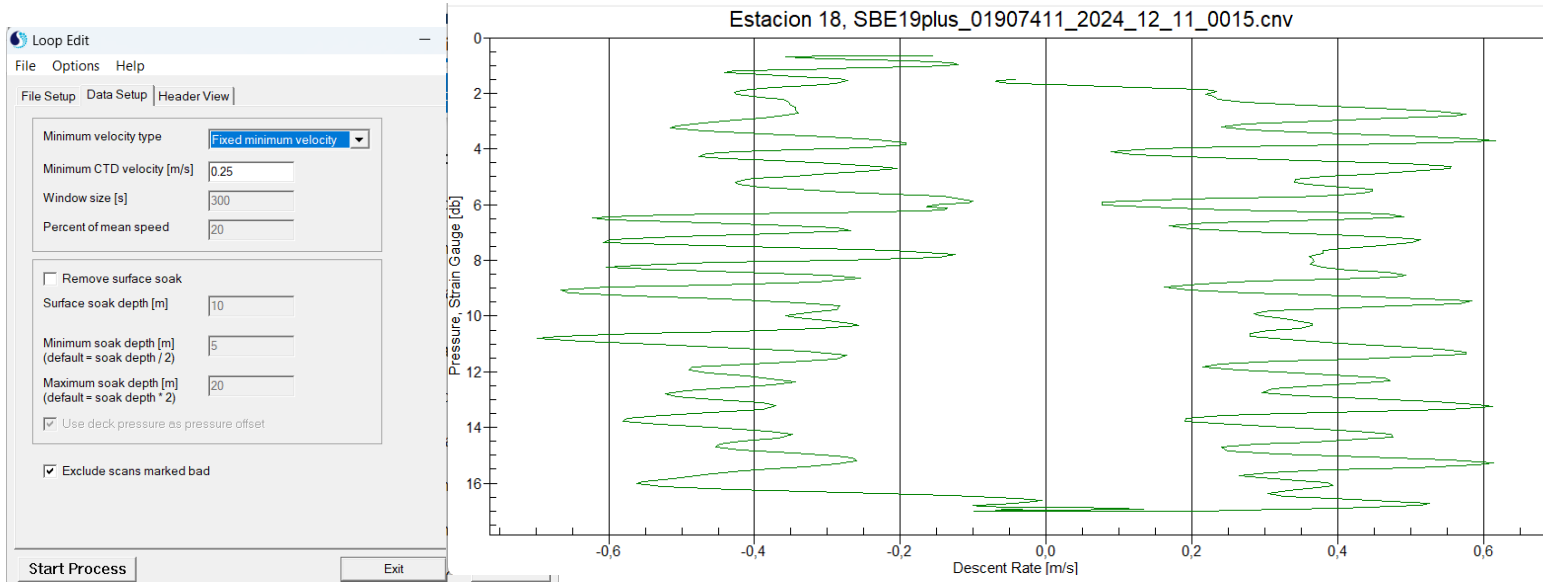
Thermal anomaly amplitude [alpha]

0.03

Thermal anomaly time constant [1/beta]

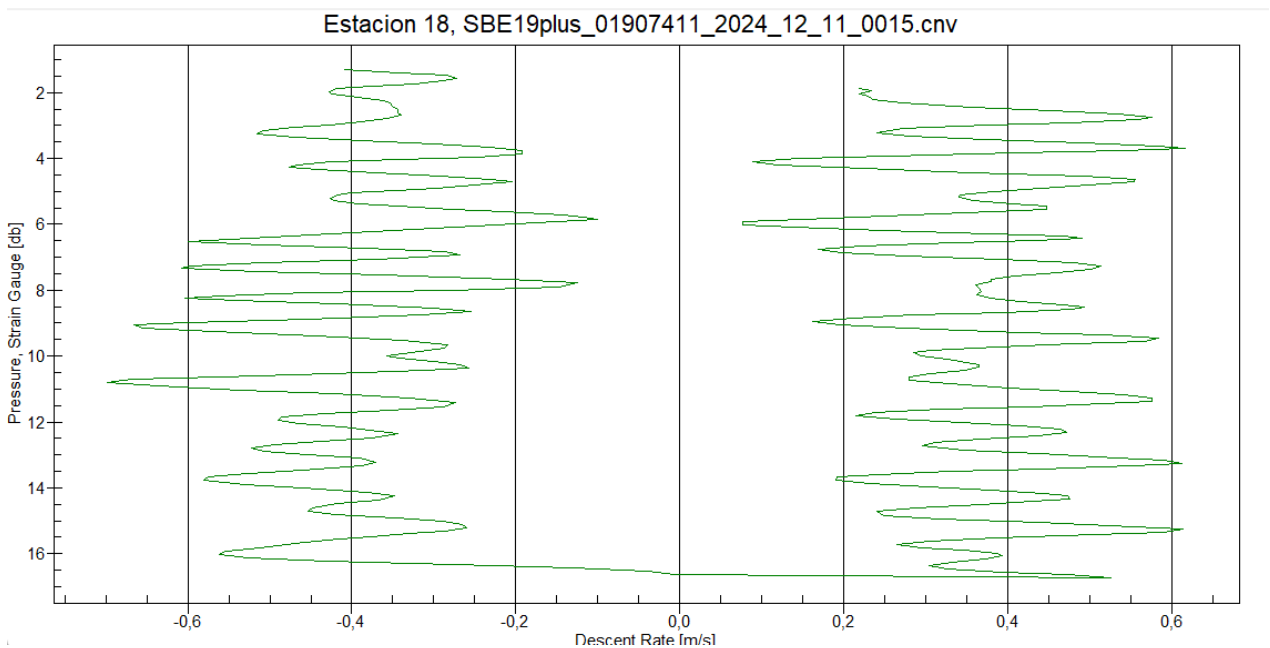
7

10) Loop Edit



La imagen de arriba muestra el ploteo de la velocidad de bajada antes del **LoopEdit** y cuando se aplica, se tiene un grafico mucho mas “limpio”. Esto se puede ver con cualquier variable.

Del mismo modo, si se tiene una zona muy somera, se puede bajar la taza de velocidad de 0.25 a 0.1 por ejemplo.



11) Derivamos

Seq. #	Variable Name [unit]
1	Salinity, Practical [PSU]
2	Oxygen, SBE 43 [ml/l]
3	Oxygen, SBE 43 [umol/l]
4	Density [sigma-theta, kg/m ³]
5	
6	
7	
8	
9	
10	

12) Derivamos teos

Se suele sacar T° potencial cuando hay cast de mas de 1000 metros

Derive TEOS-10

File Options Help

File Setup Data Setup Header View

Instrument type: Other

Source for Latitude / Longitude data when NMEA data is not present

☒ Values entered below ☐ Text file (*.txt)

Latitude: -36.5 Longitude: -72

Source for pressure data when pressure column is not present (some moored instruments)

☒ Value entered below ☐ Text file (*.txt)

Pressure, decibars: 0

Select TEOS-10 Variables...

Note: .txt file(s) must be in same directory as .csv data file, and must have same file name (excluding extension).

Start Process Exit Cancelar

Seq. #	Variable Name [unit]	
1	Absolute Salinity [g/kg]	Add
2	Conservative Temperature [ITS-90, deg C]	Change
3	density, TEOS-10 [density, kg/m ³]	Delete
4		Insert
5		Delete All
6		
7		

13) BinAverage

Bin Average

File Options Help

File Setup Data Setup Header View

Bin type: Pressure

Bin size: 1

☐ Include number of scans per bin

☒ Exclude scans marked bad

Begin scans to skip over: 0

End scans to omit: 0

Min scans per bin: 1

Max scans per bin: 2147483647

Cast to process: Upcast and downcast

☐ Include surface bin

Surface bin minimum value: 0

Surface bin maximum value: 0

Surface bin value: 0

Start Process Exit Cancel

14) Final

```
# name 0 = scan: Scan Count
# name 1 = prdM: Pressure, Strain Gauge [db]
# name 2 = depSM: Depth [salt water, m], lat = 36.50
# name 3 = tv290C: Temperature [ITS-90, deg C]
# name 4 = c0S/m: Conductivity [S/m]
# name 5 = sbeox0V: Oxygen raw, SBE 43 [V]
# name 6 = sbeox0ML/L: Oxygen, SBE 43 [ml/l]
# name 7 = sal00: Salinity, Practical [PSU]
# name 8 = timeS: Time, Elapsed [seconds]
# name 9 = dz/dtM: Descent Rate [m/s]
# name 10 = sal00: Salinity, Practical [PSU]
# name 11 = sbeox0ML/L: Oxygen, SBE 43 [ml/l], WS = 2
# name 12 = sbeox0Mm/L: Oxygen, SBE 43 [umol/l], WS = 2
# name 13 = sigma-é00: Density [sigma-theta, kg/m^3]
# name 14 = gsw_saA0: Absolute Salinity [g/kg]
# name 15 = gsw_ctA0: Conservative Temperature [ITS-90, deg C]
# name 16 = gsw_densityA0: density, TEOS-10 [density, kg/m^3]
# name 17 = flag: flag
```

895	2.000	1.985	12.0006	3.945427	1.2176	1.9924	34.4651	223.412	0.226	34.4672	1.9880	88.783	26.1752	34.6299	12.0008	1026.1877	
0.0000e+00	905	3.000	2.978	11.9057	3.935113	1.2050	1.9345	34.4346	225.952	0.419	34.4539	1.8960	84.677	26.1829	34.6166	11.9060	1026.2000
0.0000e+00	916	4.000	3.971	11.6728	3.910293	1.1523	1.7083	34.3898	228.643	0.344	34.4265	1.6405	73.263	26.2054	34.5889	11.6734	1026.2268