

# IO8 CTD-Chipod Notes

Andy Pickering

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## Contents

<b>1</b>	<b>About</b>	<b>2</b>
<b>2</b>	<b>Data and Processing</b>	<b>2</b>
2.1	CTD . . . . .	2
2.2	Chipod . . . . .	2
2.3	Further processing and analysis . . . . .	2
<b>3</b>	<b>Processing Notes</b>	<b>4</b>
3.0.1	Time Offsets . . . . .	4
<b>4</b>	<b>Example Raw Chipod Data for 1 cast</b>	<b>6</b>
<b>5</b>	<b>Results</b>	<b>8</b>
5.0.1	CTD Data . . . . .	9
5.0.2	Data from each individual Chipod . . . . .	10
5.0.3	One variable from all Chipods . . . . .	12

# 1 About

Notes on processing and analysis of CTD-chipod data collected during IO8 cruise..

## 2 Data and Processing

Data paths are set w/ :

- `erb+Loadchipod_pathsIO8.m+`  
Chipod deployment info is given in
- `erb+ChipodDeploymentIO8+`

### 2.1 CTD

Raw (hex) CTD data are processed with:

- `erb+ProcessCTD_hexIO8.m+`

### 2.2 Chipod

Table 1: Summary of Chipod deployment .

Raw chipod files are plotted with

- `erb+PlotChipodDataRawIO8.m+` to check for obvious issues/malfunctions with any of the instruments; these plots are saved in `erb+/Figures/chipodraw/`. Based on a quick look at these:

- 

Files with obviously bad or missing data (based on above raw plots) are noted in `erb+badfilelistXXX.m+` and, which will prevent them from being loaded in the processing.

Processing scripts are:

- `erb+MakeCastsCTDchipodIO8.m + erb + DoChiCalcIO8.m+`

### 2.3 Further processing and analysis

- Data from all casts are combined into a single structure w/ `erb+MakeCombinedStructIO8.m+`



Figure 1: Map of CTD cast locations during cruise IO8.

### 3 Processing Notes

- Table efchidepinfo gives the info for *Tableefprocsum* gives a summary of the processing from *MakeCasts*.

#### 3.0.1 Time Offsets

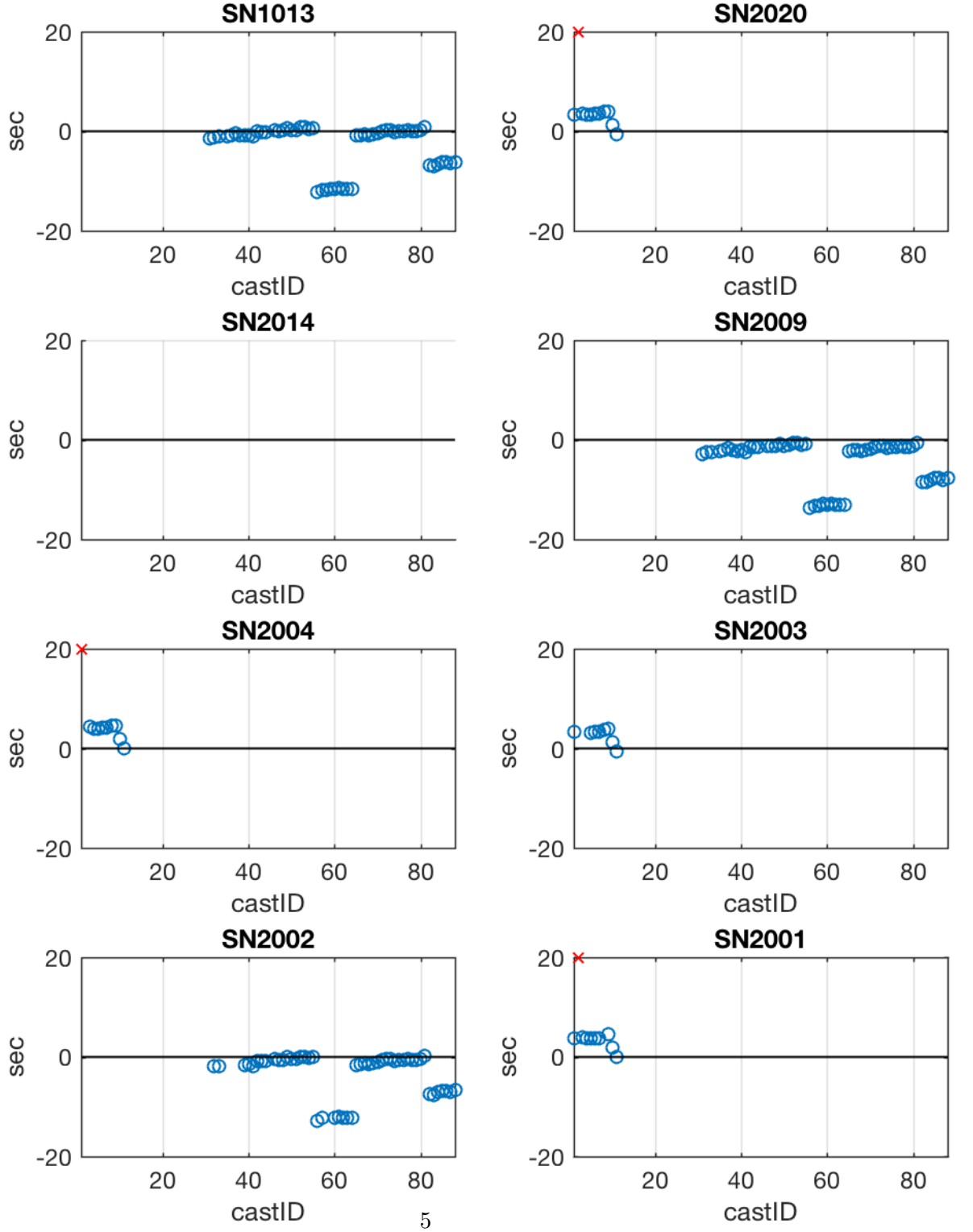


Figure 2: Time-offsets for all  $\chi$ pods, found by aligning with CTD data.

## 4 Example Raw Chipod Data for 1 cast

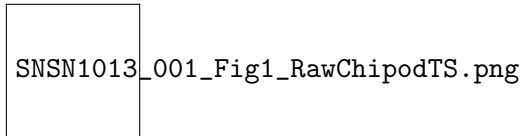


Figure 3: Raw chipod data from SNSN1013 for a CTD cast.

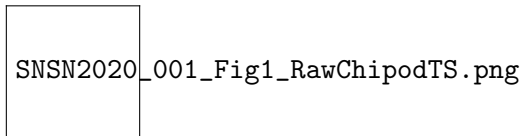


Figure 4: Raw chipod data from SNSN2020 for a CTD cast.

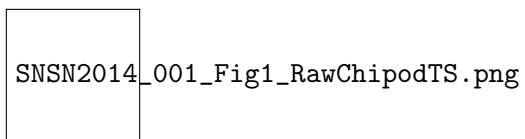


Figure 5: Raw chipod data from SNSN2014 for a CTD cast.

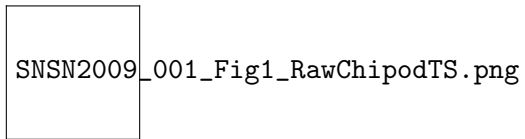


Figure 6: Raw chipod data from SNSN2009 for a CTD cast.

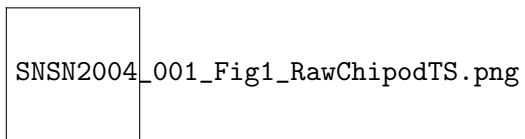


Figure 7: Raw chipod data from SNSN2004 for a CTD cast.

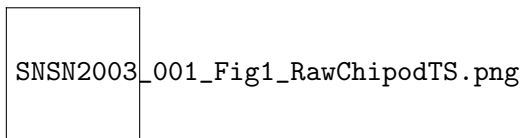


Figure 8: Raw chipod data from SNSN2003 for a CTD cast.

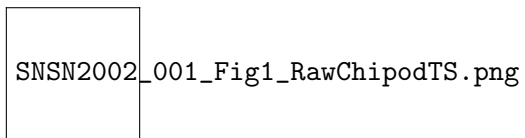


Figure 9: Raw chipod data from SNSN2002 for a CTD cast.

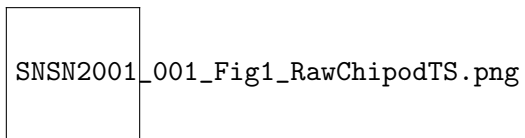


Figure 10: Raw chipod data from SNSN2001 for a CTD cast.

## 5 Results



### 5.0.1 CTD Data

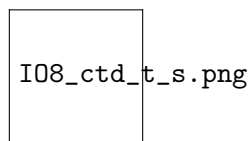


Figure 11: Plot of temperature and salinity from CTD downcasts on all casts.

### 5.0.2 Data from each individual Chipod

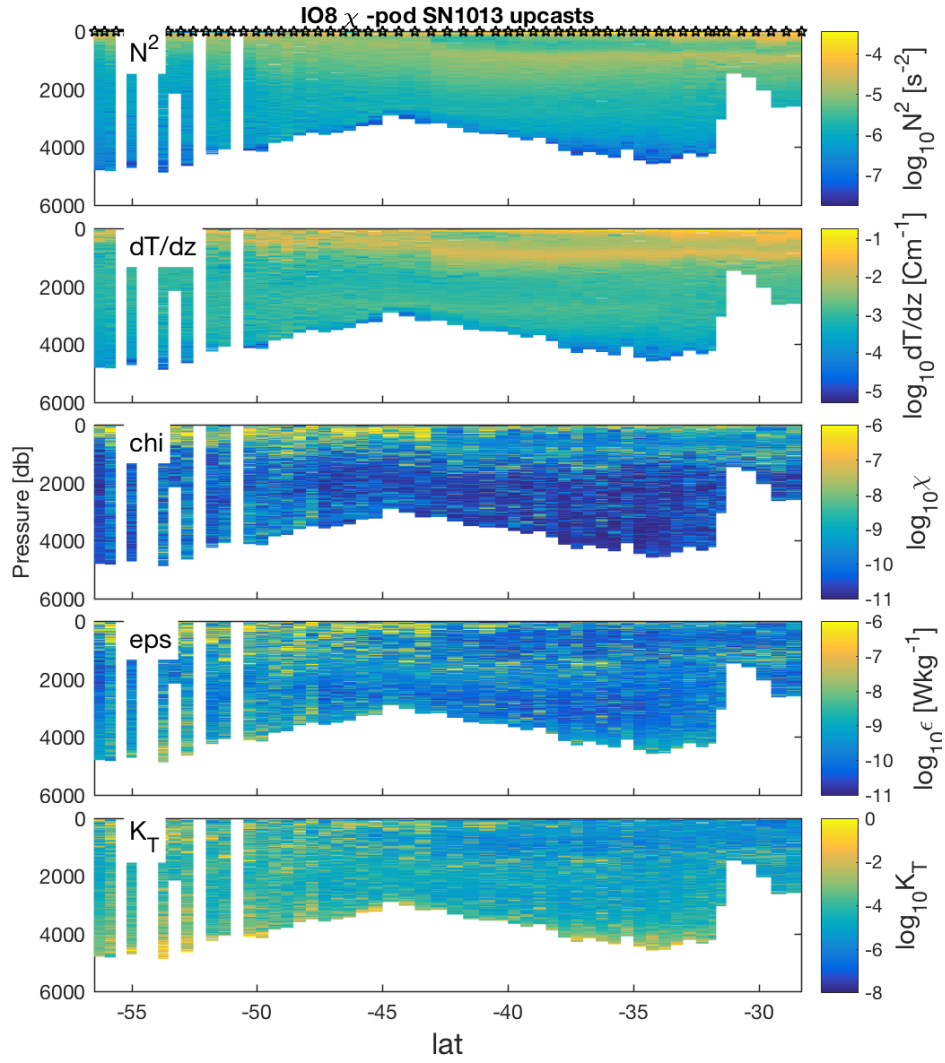


Figure 12: All chipod profiles from sensor SN1013. Variables are:  $N^2$ ,  $dT/dz$ ,  $\chi$ ,  $\epsilon$ , and  $K_T$ .

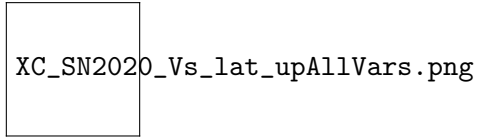


Figure 13: All chipod profiles from sensor SN2020. Variables are: N2, dTdz, chi, eps, and KT.

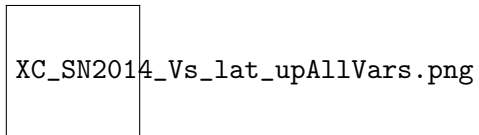


Figure 14: All chipod profiles from sensor SN2014. Variables are: N2, dTdz, chi, eps, and KT.

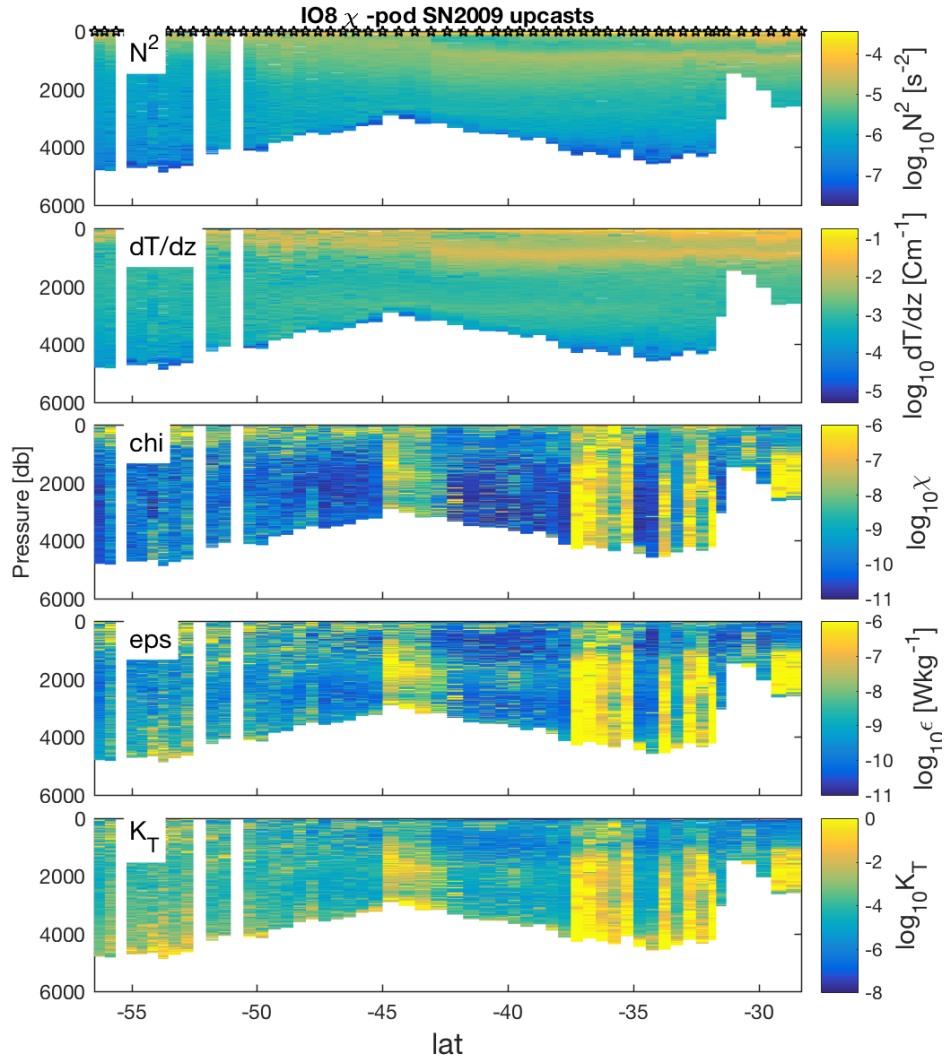


Figure 15: All chipod profiles from sensor SN2009. Variables are:  $N^2$ ,  $dT/dz$ ,  $\chi$ ,  $\epsilon$ , and  $K_T$ .

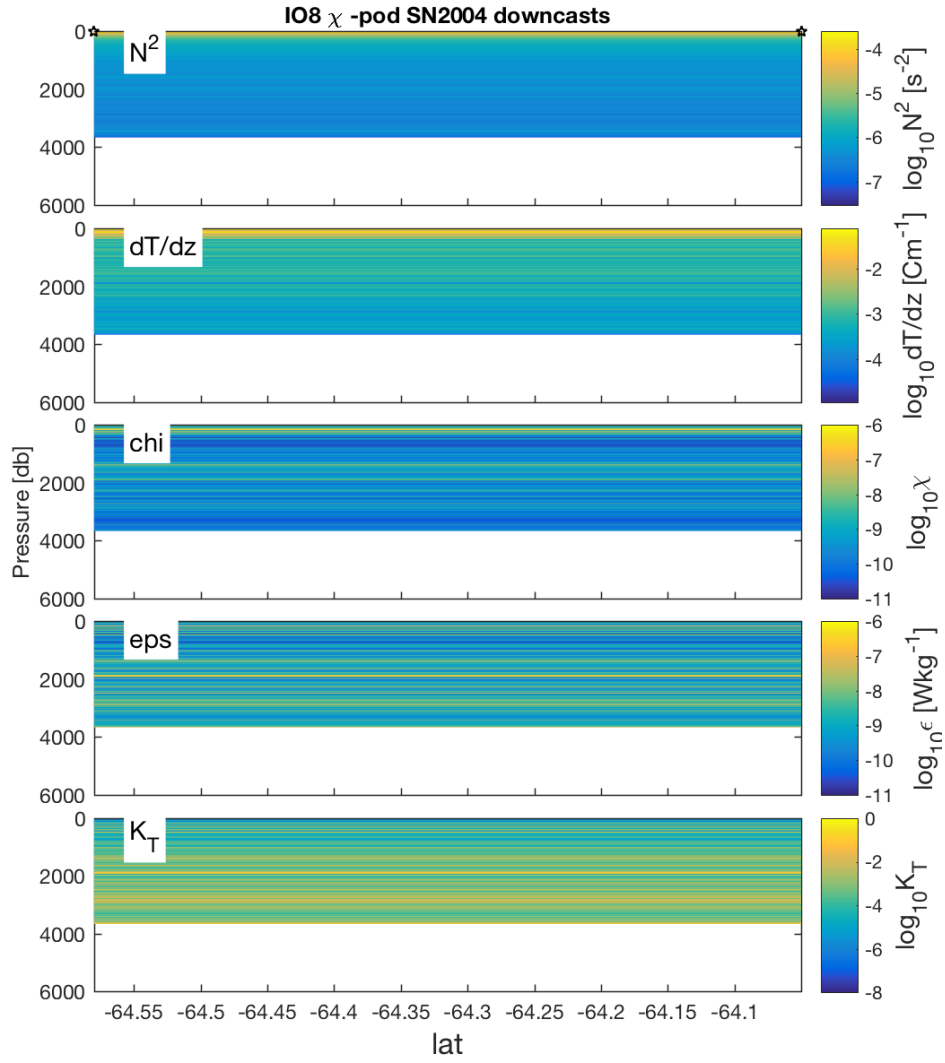


Figure 16: All chipod profiles from sensor SN2004. Variables are:  $N^2$ ,  $dT/dz$ ,  $\chi$ ,  $\epsilon$ , and  $K_T$ .

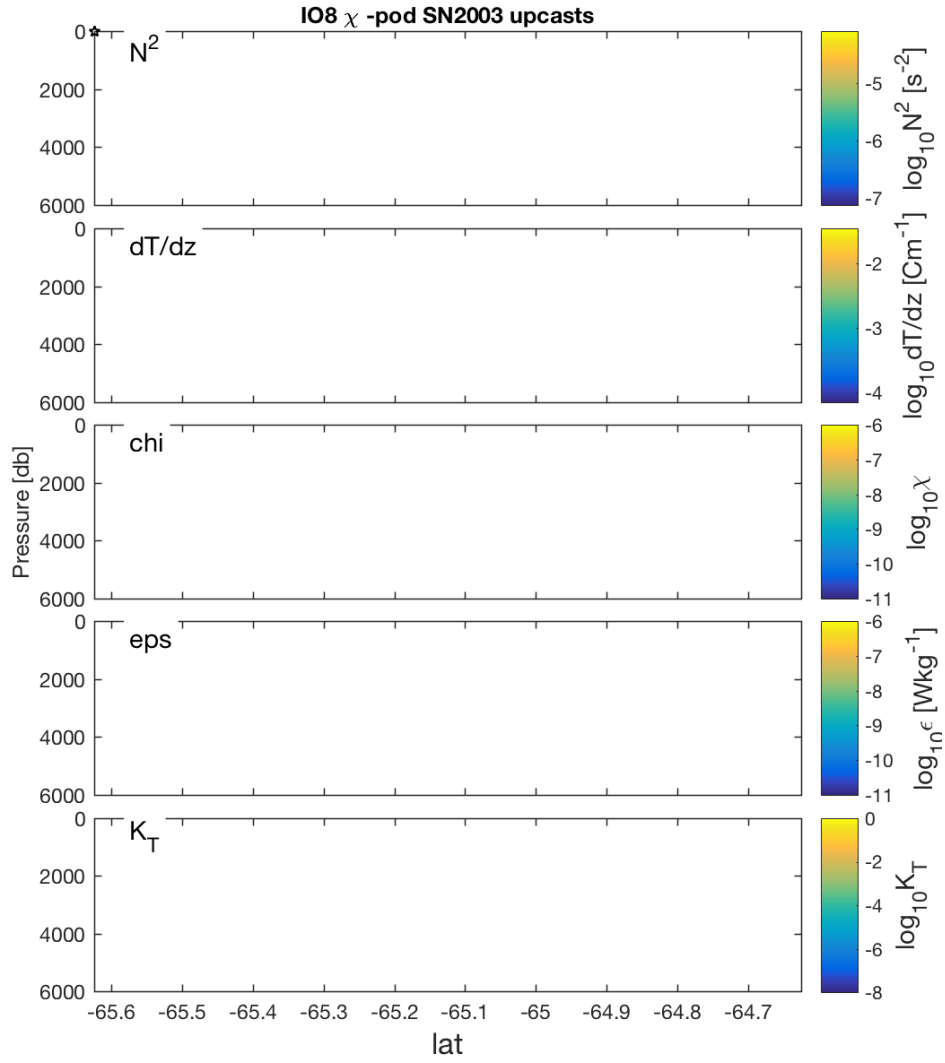


Figure 17: All chipod profiles from sensor SN2003. Variables are:  $N^2$ ,  $dT/dz$ ,  $\chi$ ,  $\epsilon$ , and  $K_T$ .

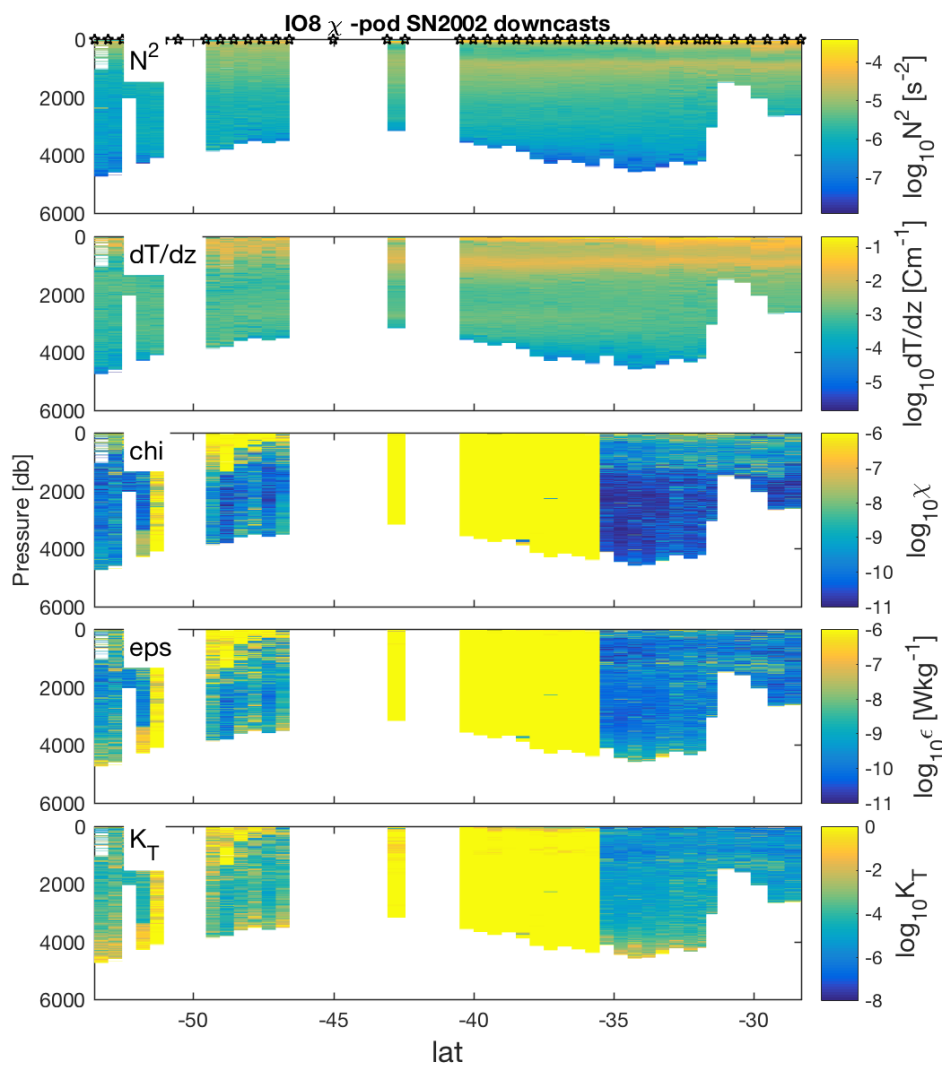


Figure 18: All chipod profiles from sensor SN2002. Variables are:  $N^2$ ,  $dT/dz$ ,  $\chi$ ,  $\epsilon$ , and  $K_T$ .



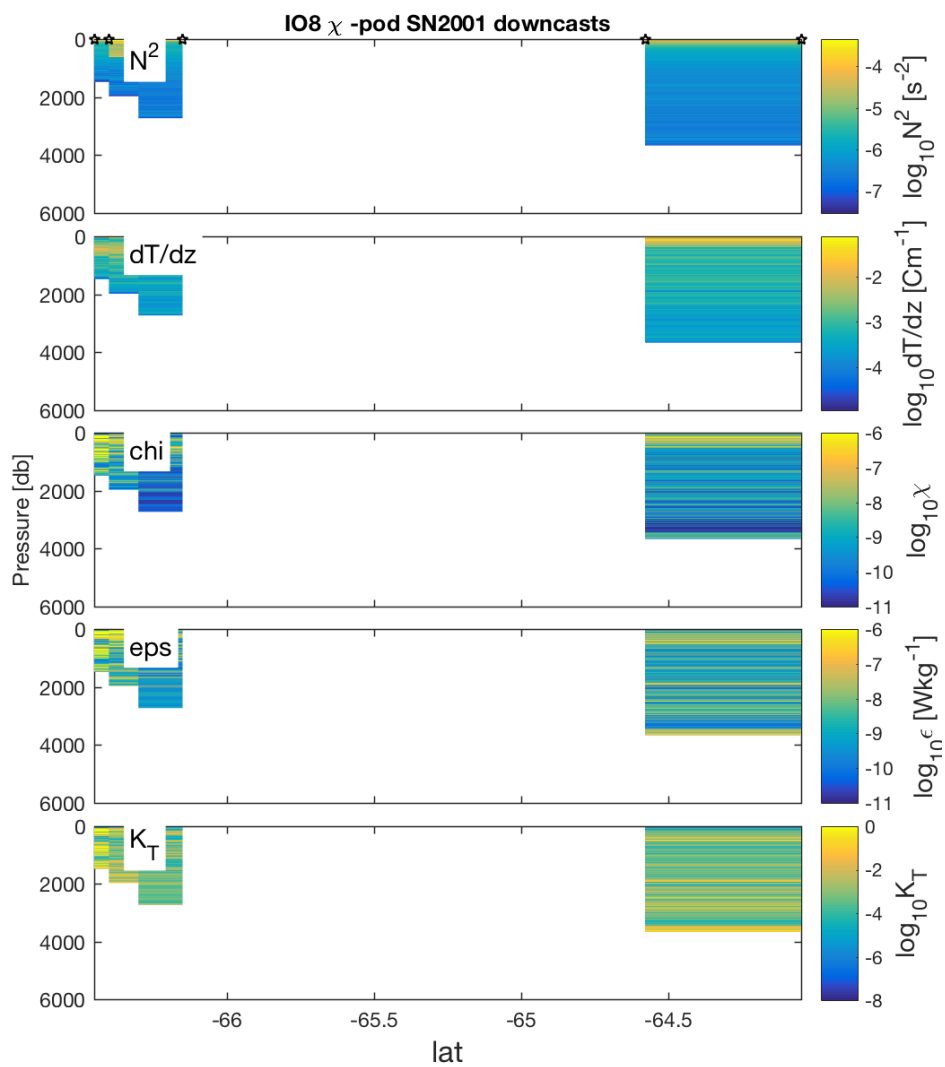


Figure 19: All chipod profiles from sensor SN2001. Variables are:  $N^2$ ,  $dT/dz$ ,  $\chi$ ,  $\epsilon$ , and  $K_T$ .

### 5.0.3 One variable from all Chipods

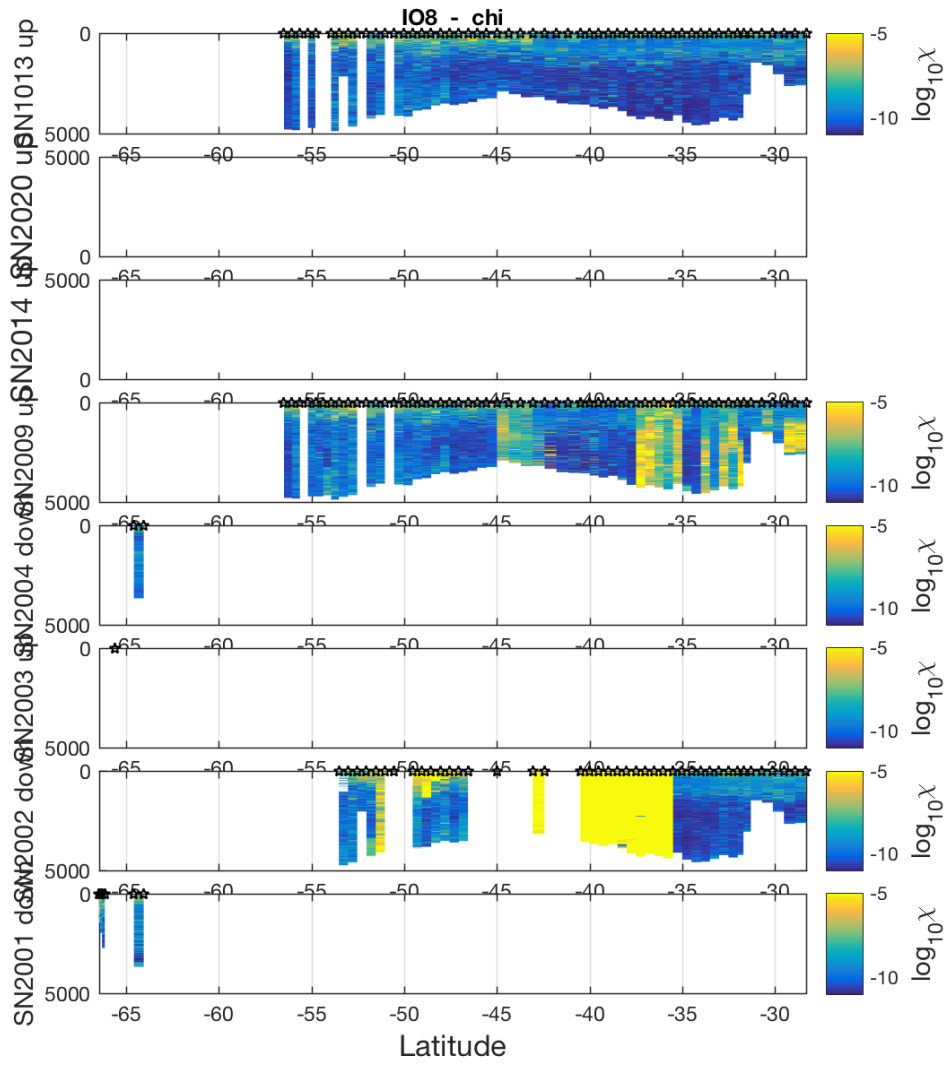


Figure 20: Plot of one variable from all chipods.

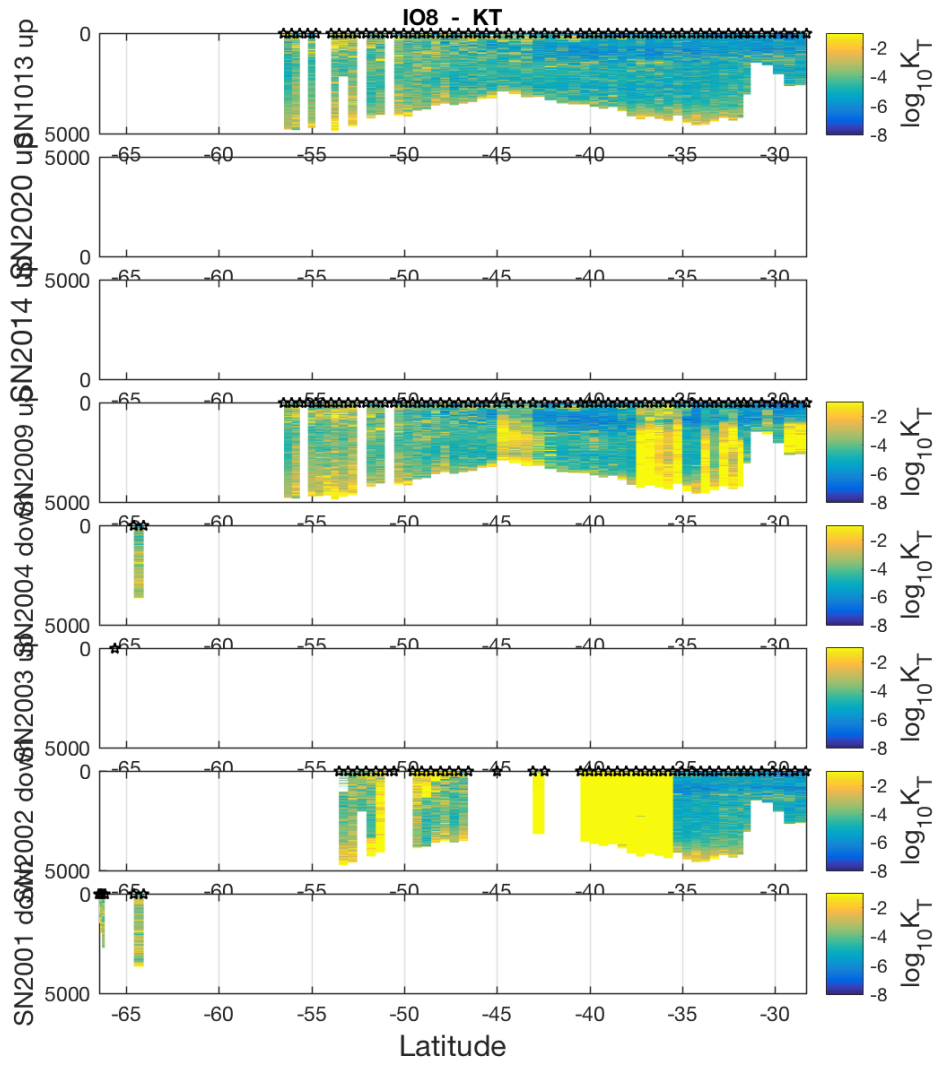


Figure 21: Plot of one variable from all chipods.