

IO8 CTD-Chipod Notes

Andy Pickering

September 7, 2017

Contents

1	About	2
2	Data and Processing	2
2.1	CTD	2
2.2	Chipod	2
2.3	Further processing and analysis	4
3	Processing Notes	5
3.0.1	Time Offsets	5
4	Example Raw Chipod Data for 1 cast	7
5	Results	9
5.0.1	CTD Data	10
5.0.2	Data from each individual Chipod	11
5.0.3	One variable from all Chipods	19

1 About

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

2 Data and Processing

Data paths are set w/ :

- Load_chipod_paths_IO8.m

Chipod deployment info is given in

- Chipod_Deploy_Info_IO8

s

2.1 CTD

Raw (hex) CTD data are processed with:

- Process_CTD_hex_IO8.m

s

2.2 Chipod

Table 1: Summary of Chipod deployment .

Raw chipod files are plotted with

- PlotChipodDataRaw_IO8.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+bad_{filelist}XXX.m+and, which will prevent them from being loaded in the processing.

Processing scripts are:

- MakeCasts_CTDchipod_IO8.m

- DoChiCalc_IO8.m

s



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

2.3 Further processing and analysis

- Data from all casts are combined into a single structure w/ `erb+MakeCombinedStruct_I08.m+`

3 Processing Notes

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

3.0.1 Time Offsets

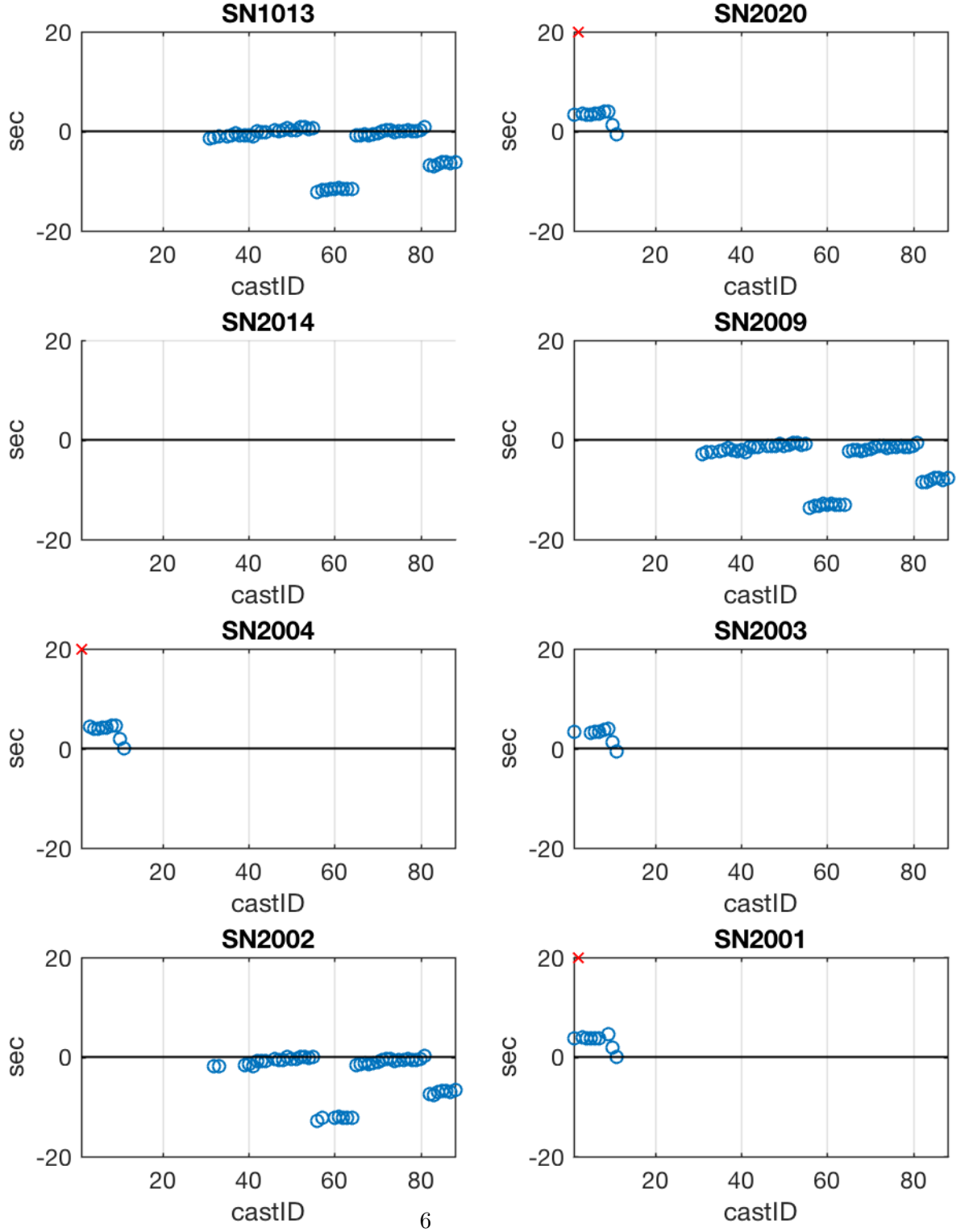


Figure 2: Time-offsets for all χ pods, found by aligning with CTD data.

4 Example Raw Chipod Data for 1 cast

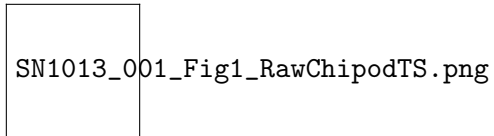


Figure 3: Raw chipod data from SN1013 for a CTD cast.

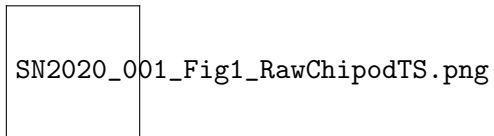


Figure 4: Raw chipod data from SN2020 for a CTD cast.

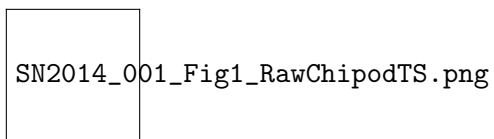


Figure 5: Raw chipod data from SN2014 for a CTD cast.

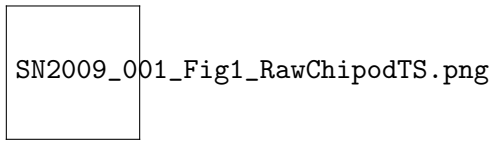


Figure 6: Raw chipod data from SN2009 for a CTD cast.

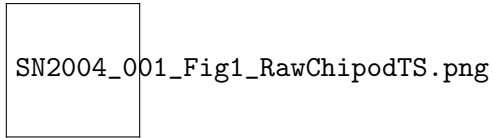


Figure 7: Raw chipod data from SN2004 for a CTD cast.

5 Results

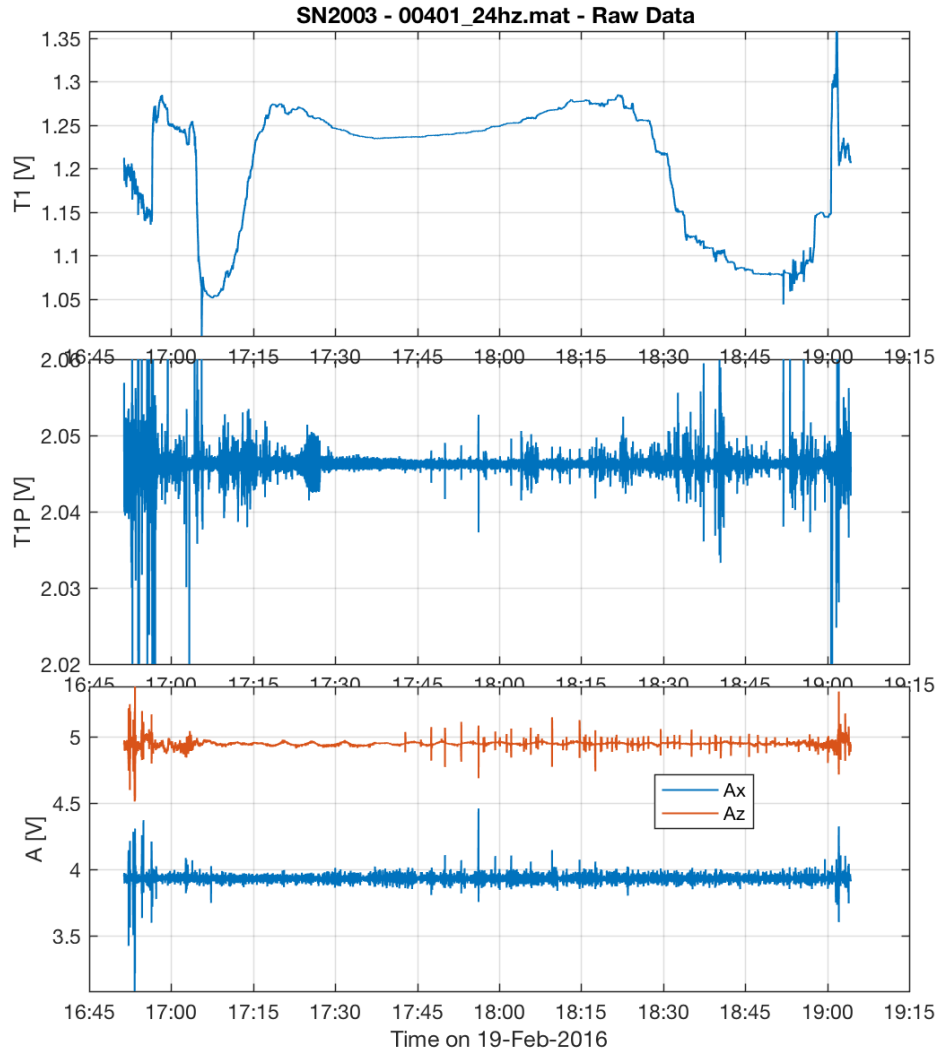


Figure 8: Raw chipod data from SN2003 for a CTD cast.

SN2002_001_Fig1_RawChipodTS.png

Figure 9: Raw chipod data from SN2002 for a CTD cast.

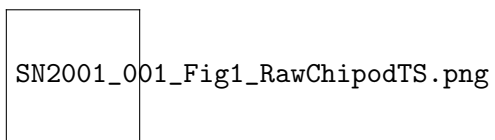


Figure 10: Raw chipod data from SN2001for a CTD cast.

s

5.0.1 CTD Data

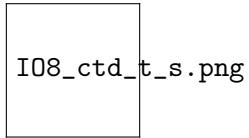


Figure 11: Plot of temperature and salinity from CTD downcasts on all casts.

s

5.0.2 Data from each individual Chipod

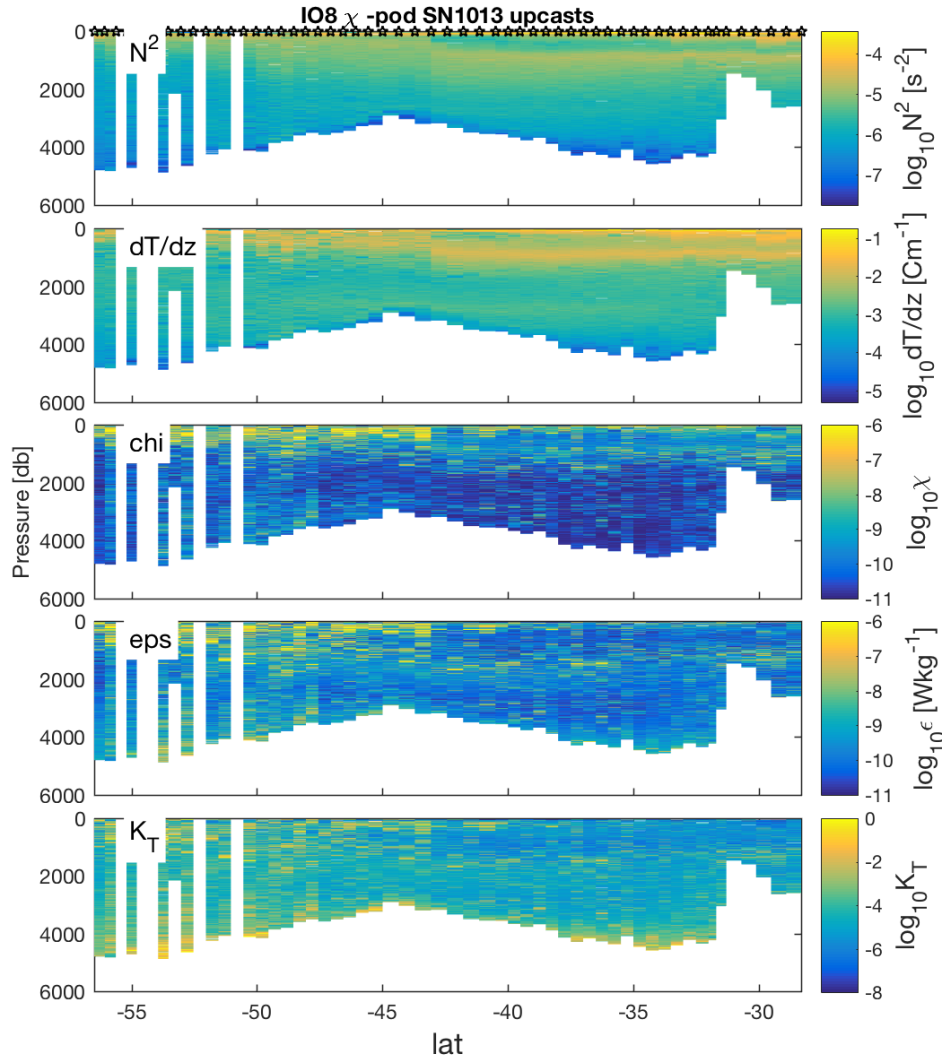


Figure 12: All chipod profiles from sensor SN1013. Variables are: N^2 , dT/dz , χ , ϵ , and K_T .

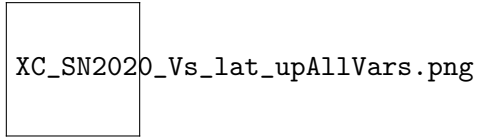


Figure 13: All chipod profiles from sensor SN2020. Variables are: N2, dTdz, chi, eps, and KT.

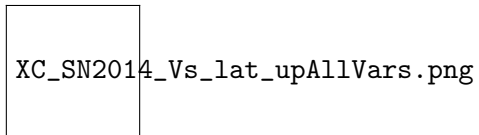


Figure 14: All chipod profiles from sensor SN2014. Variables are: N2, dTdz, chi, eps, and KT.

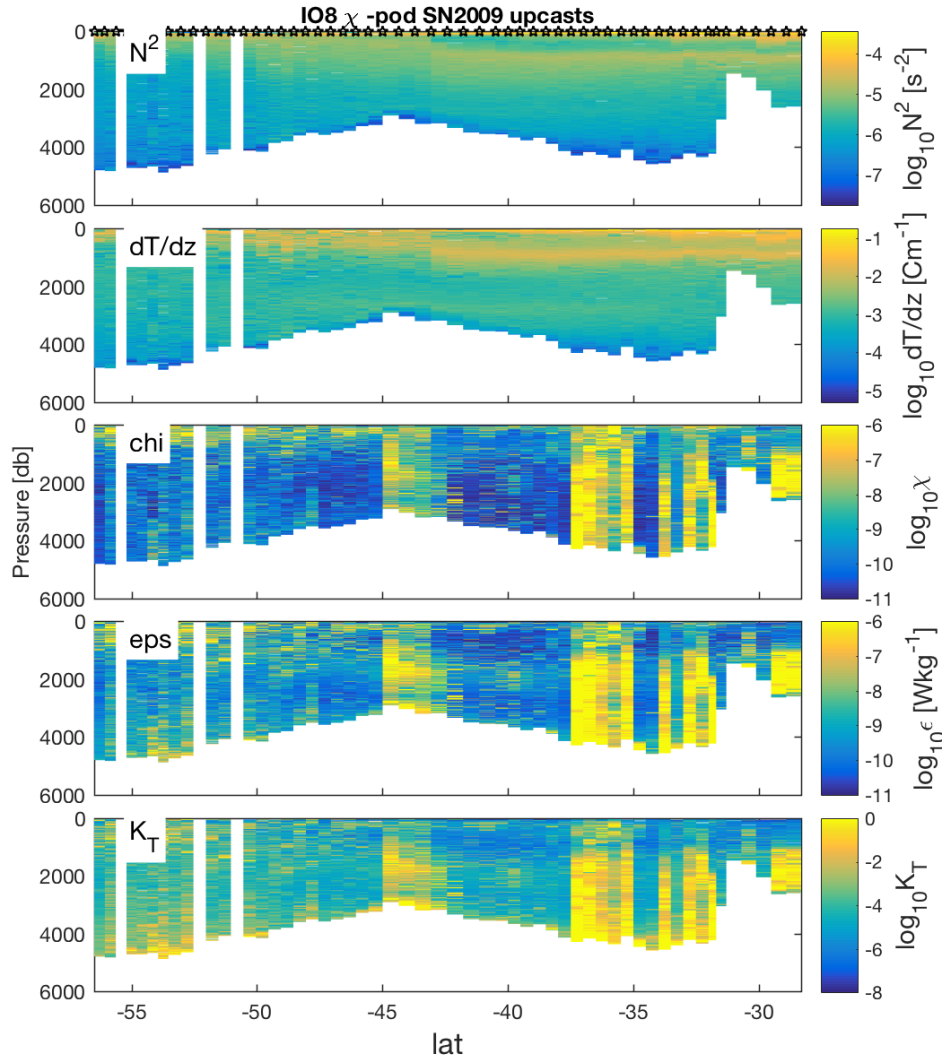


Figure 15: All chipod profiles from sensor SN2009. Variables are: N^2 , dT/dz , χ , ϵ , and K_T .

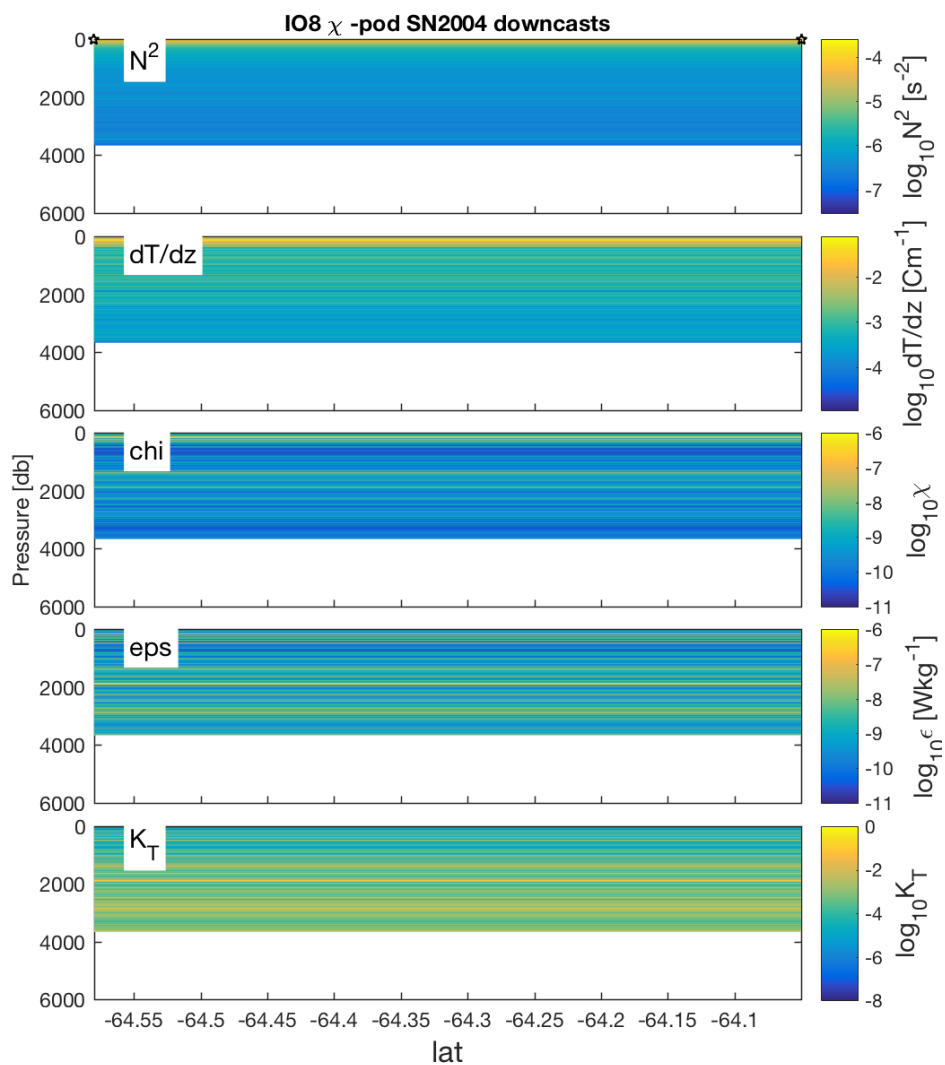


Figure 16: All chipod profiles from sensor SN2004. Variables are: N^2 , dT/dz , χ , ϵ , and K_T .

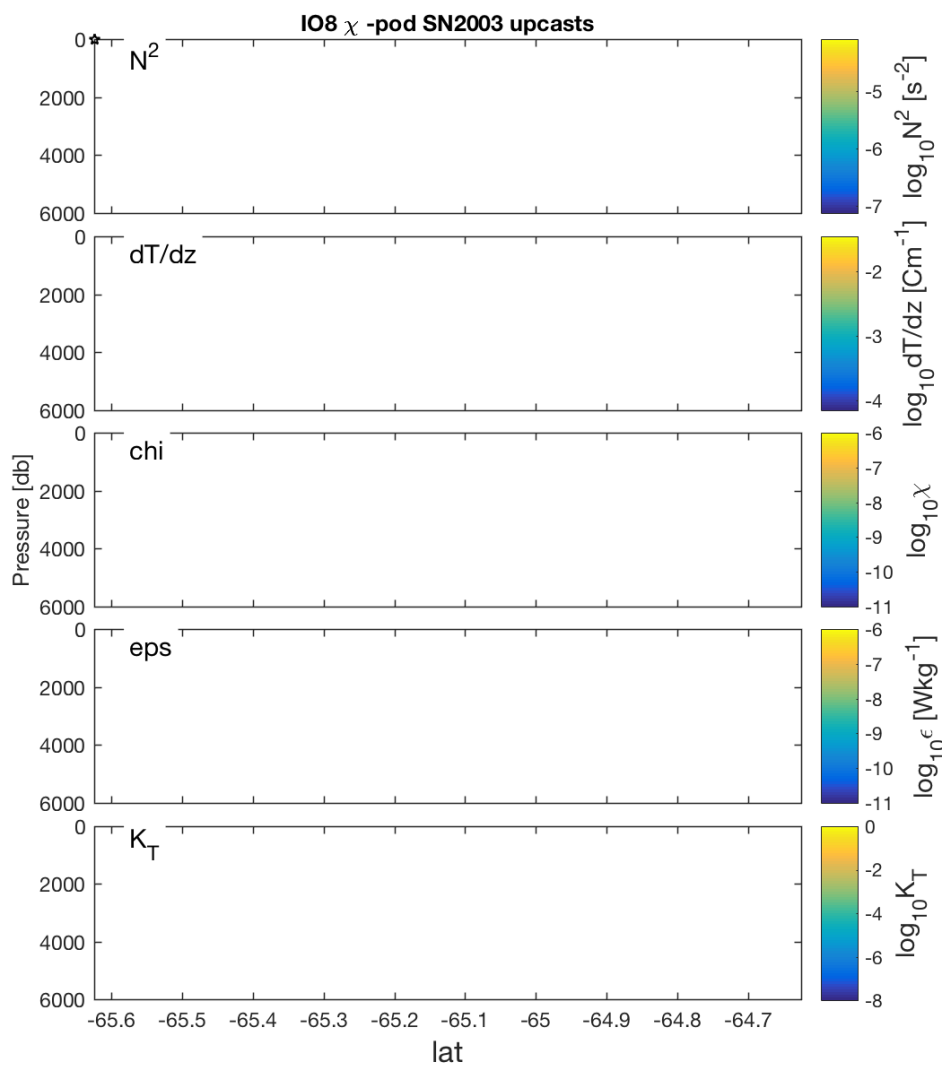


Figure 17: All chipod profiles from sensor SN2003. Variables are: N^2 , dT/dz , χ , ϵ , and K_T .

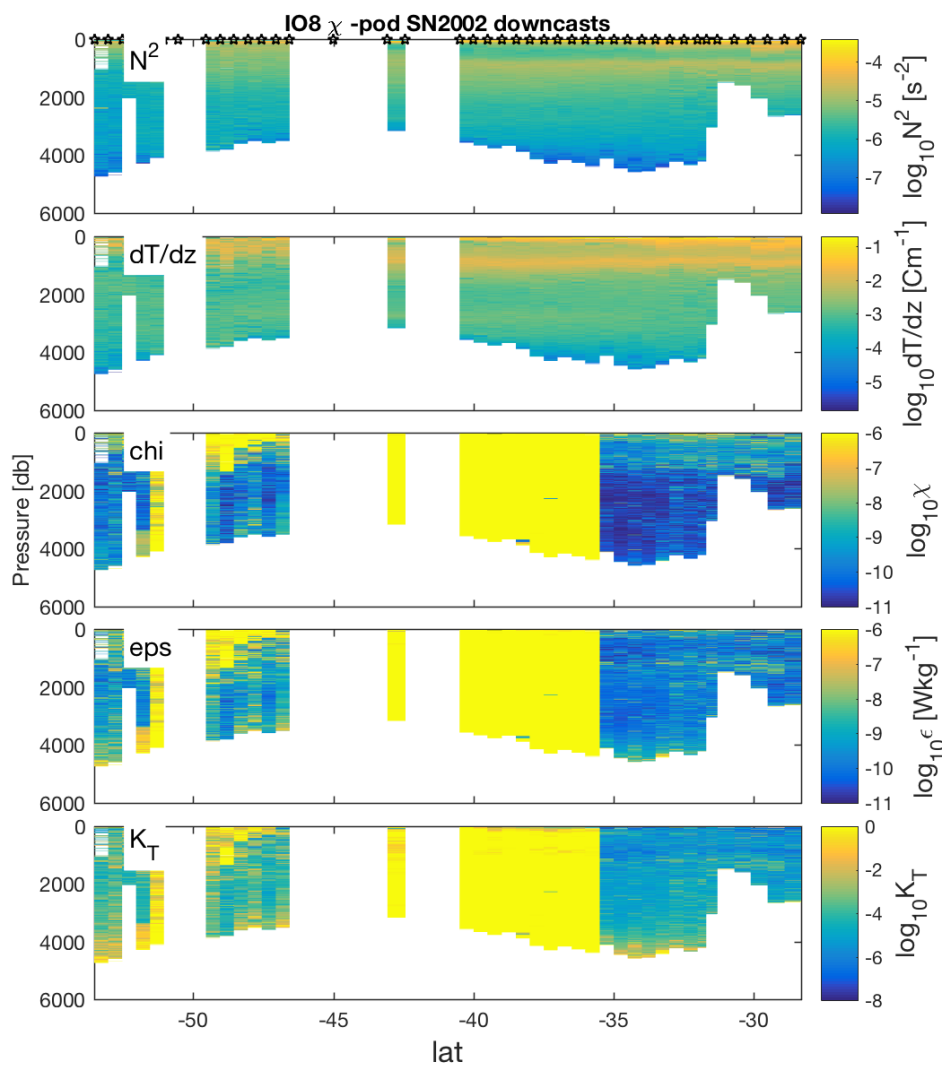


Figure 18: All chipod profiles from sensor SN2002. Variables are: N^2 , dT/dz , χ , ϵ , and K_T .

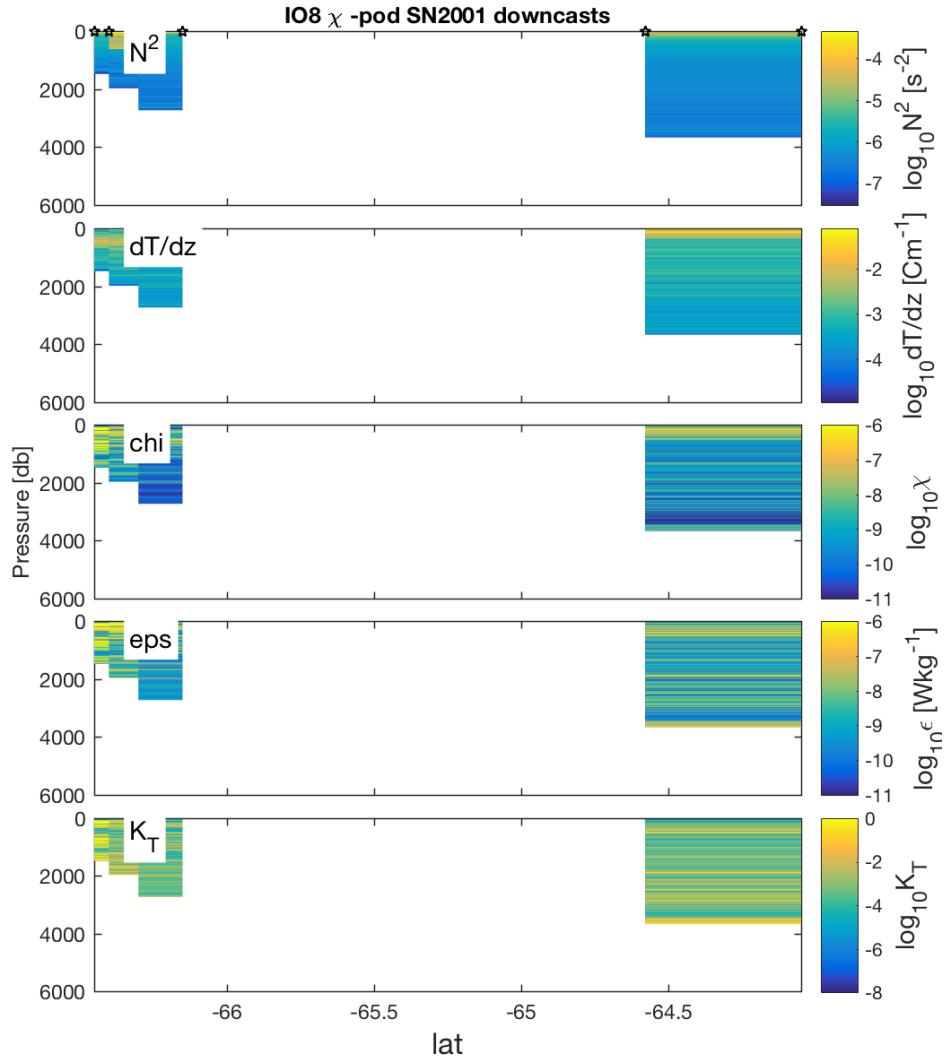


Figure 19: All chipod profiles from sensor SN2001. Variables are: N^2 , dT/dz , χ , ϵ , and K_T .

s

5.0.3 One variable from all Chipods

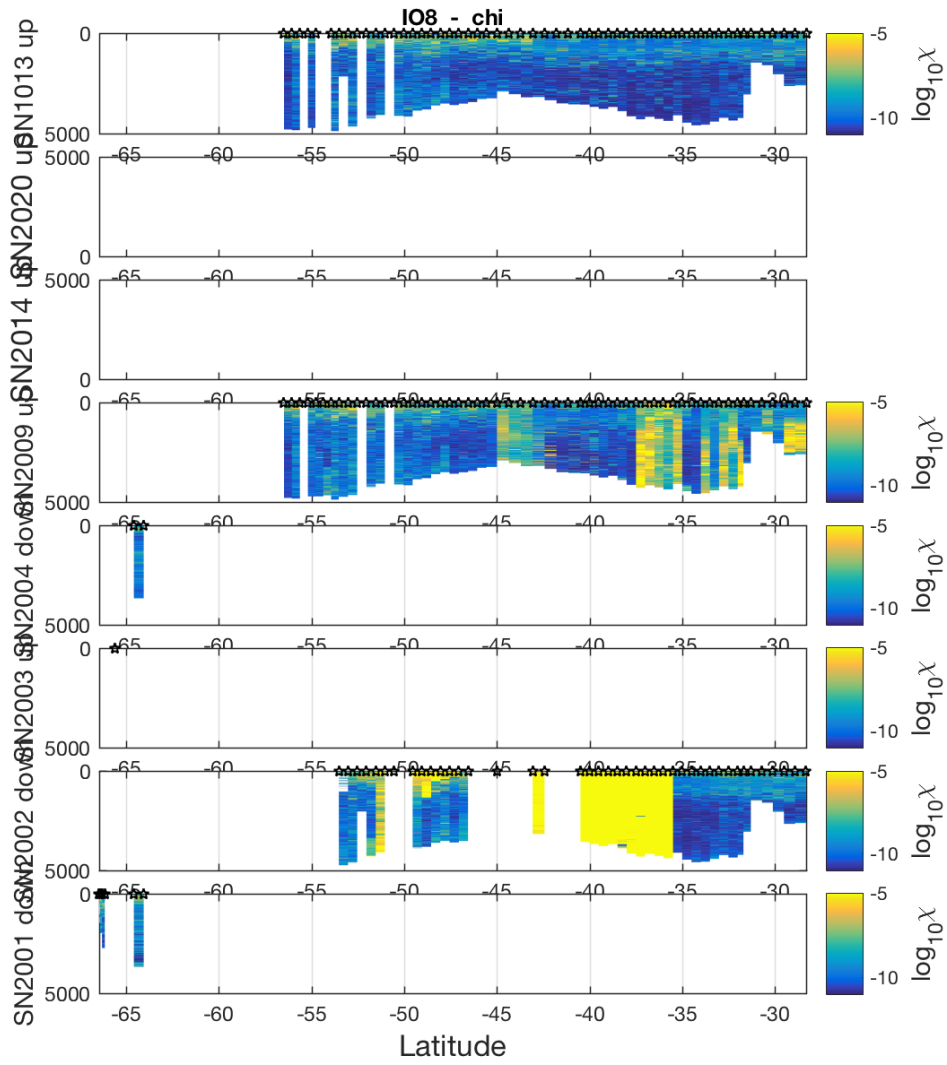


Figure 20: Plot of one variable from all chipods.

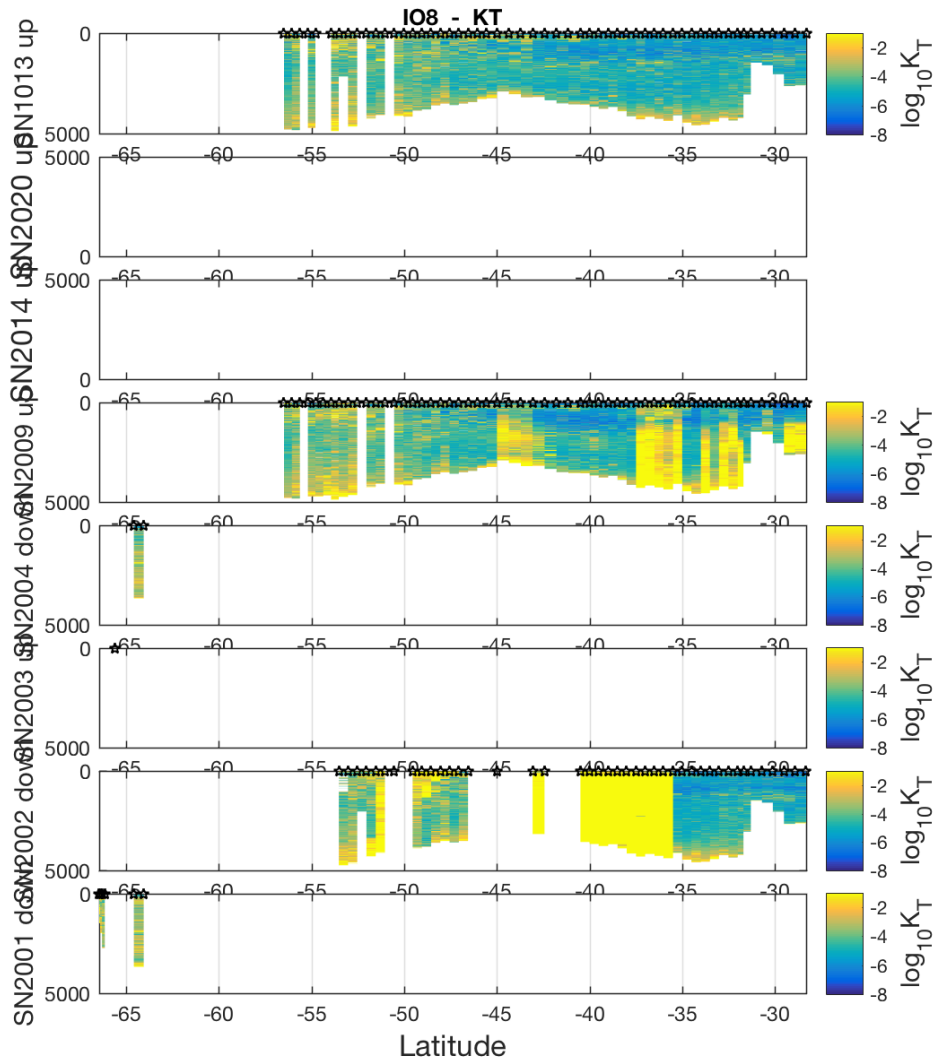


Figure 21: Plot of one variable from all chipods.