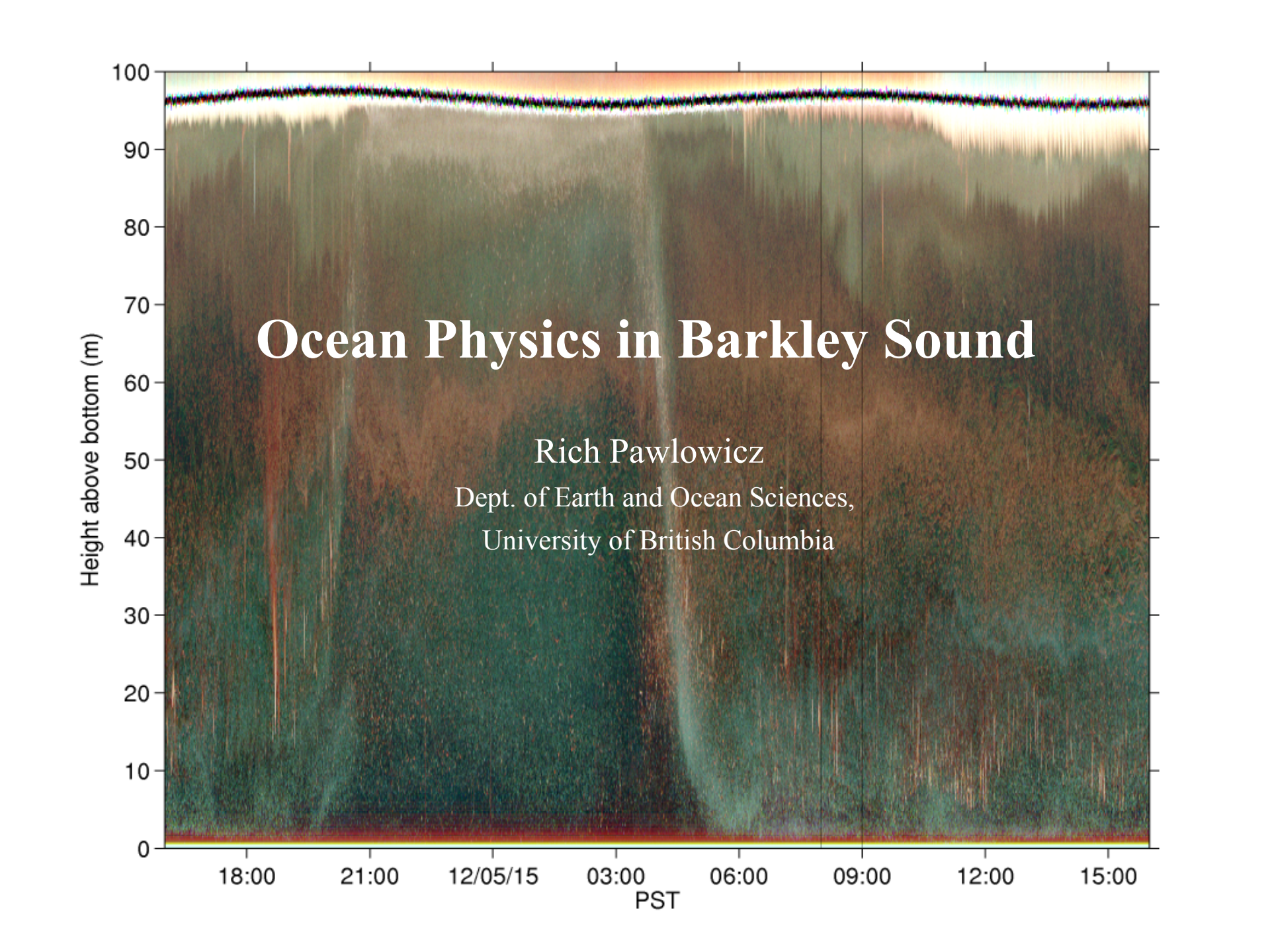
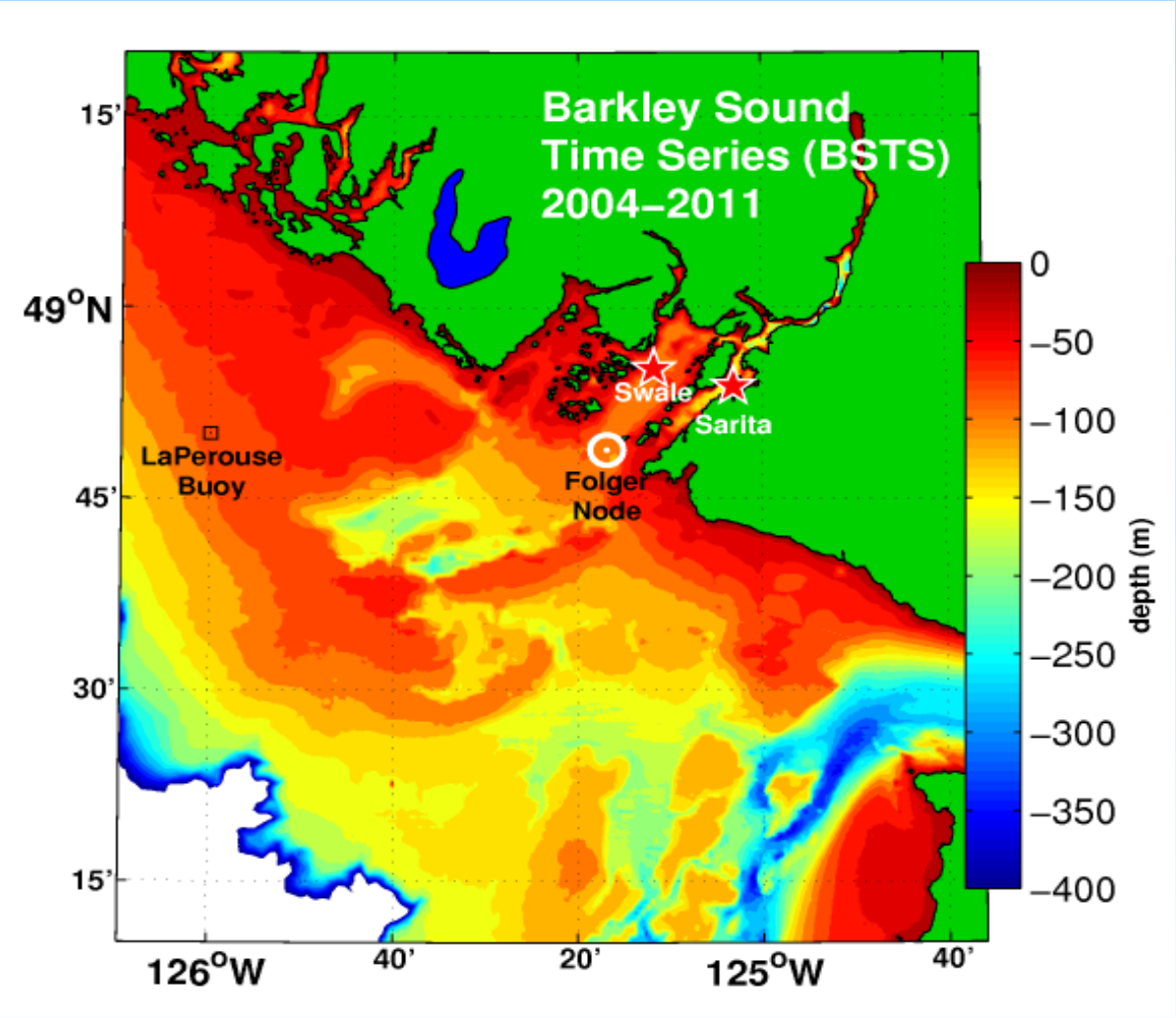
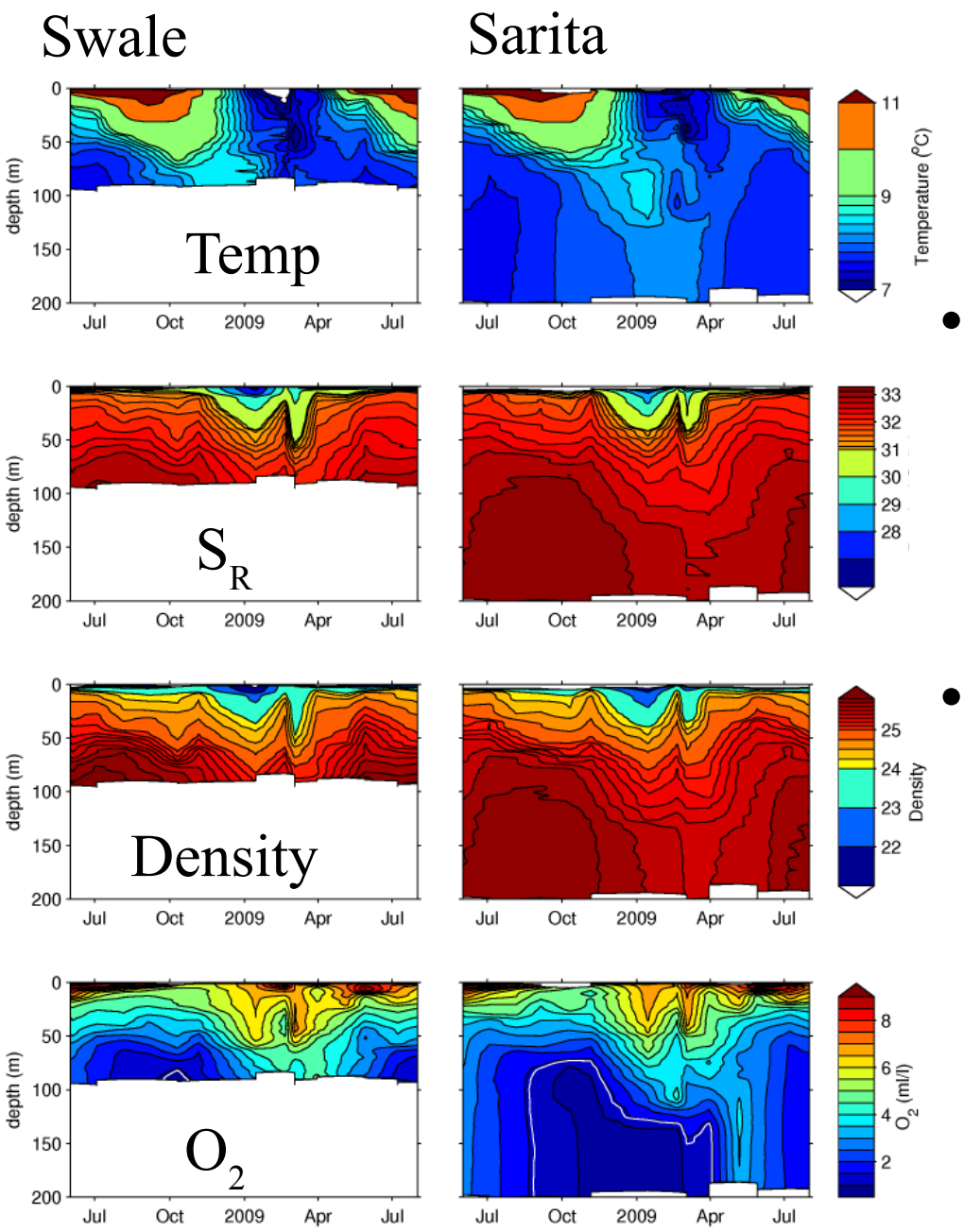

Ocean Physics in Barkley Sound
Rich Pawlowicz
Dept. of Earth and Ocean Sciences,
University of British Columbia
Height above bottom (m)
100
90
80
70
60
50
40
30
20
10
0
18:00
21:00
12/05/15
03:00
06:00
09:00
12:00
15:00
PST

2 Projects:



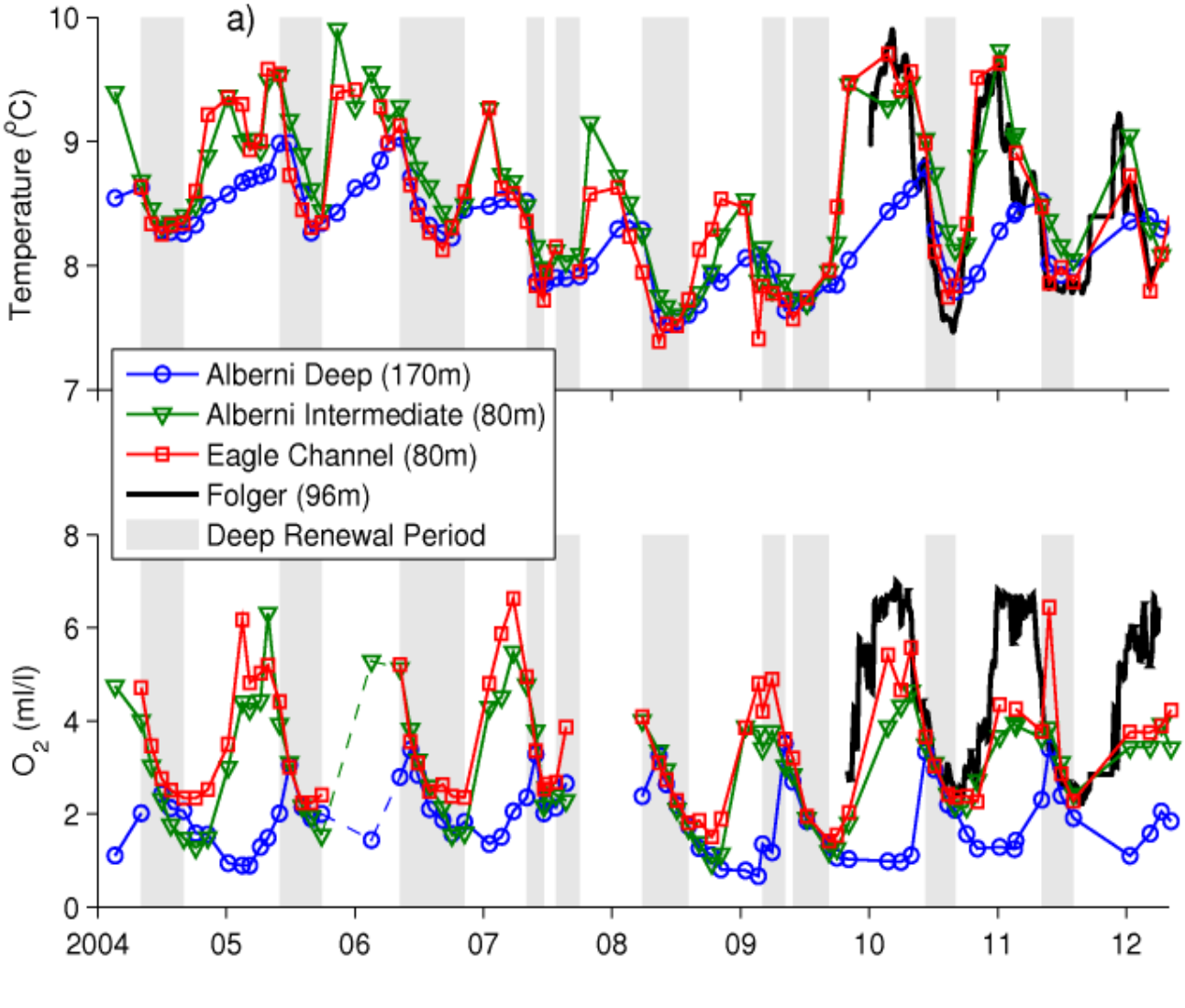
(1) Physical oceanography of Barkley Sound: Seasonal and Interannual Variability (Monthly CTD/O2/Fl time series at Swale and Sarita Stations)

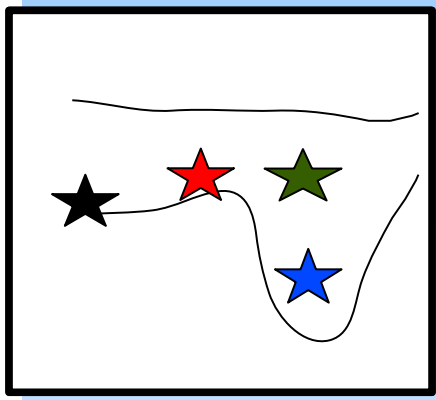
(2) High-frequency acoustics at Folger node (zooplankton, bubbles, eventually fish...)



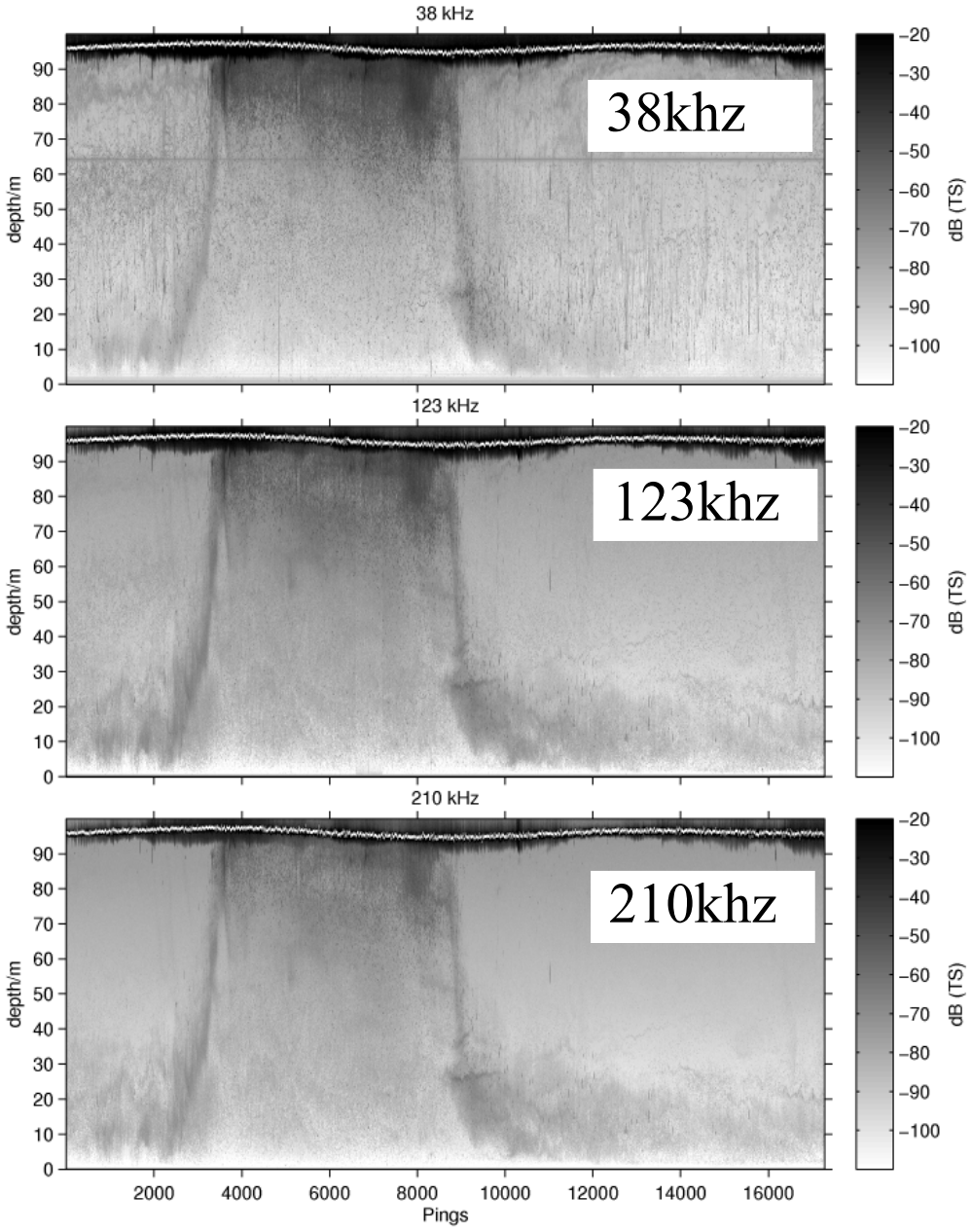
Seasonal cycle

- 3 layers: 0-60m, 60-120m, 120-bottom, with different timing
- O2 often slightly hypoxic (<1.4 ml/l) near bottom



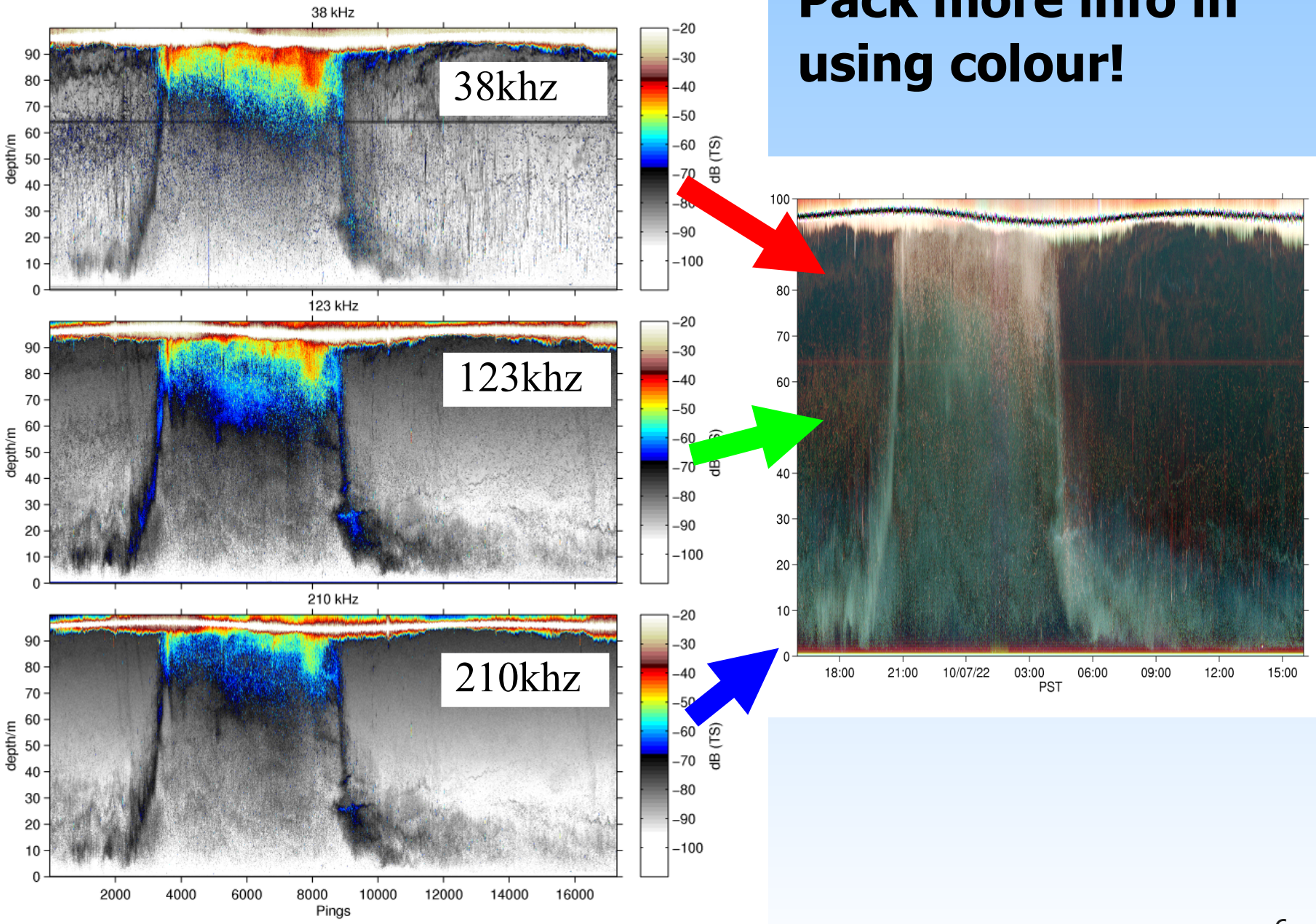


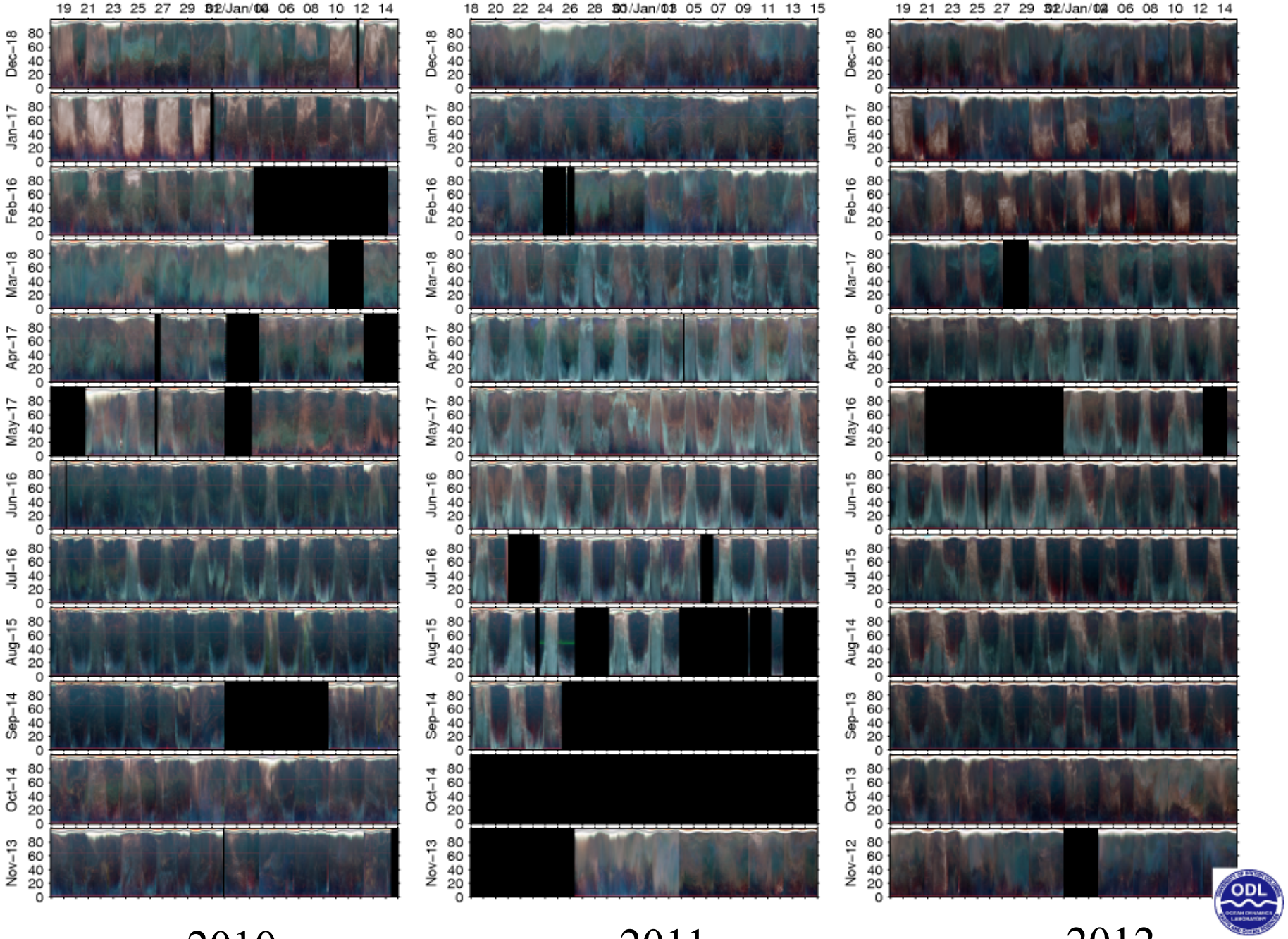
- Highest deep O2 at start of renewal, pretty low O2 at end
- Intermediate renewal time is O(weeks)
- Deep O2 used up at 2.4 ml/l/yr
- Intermediate O2 used up at rate ~20 ml/l/yr



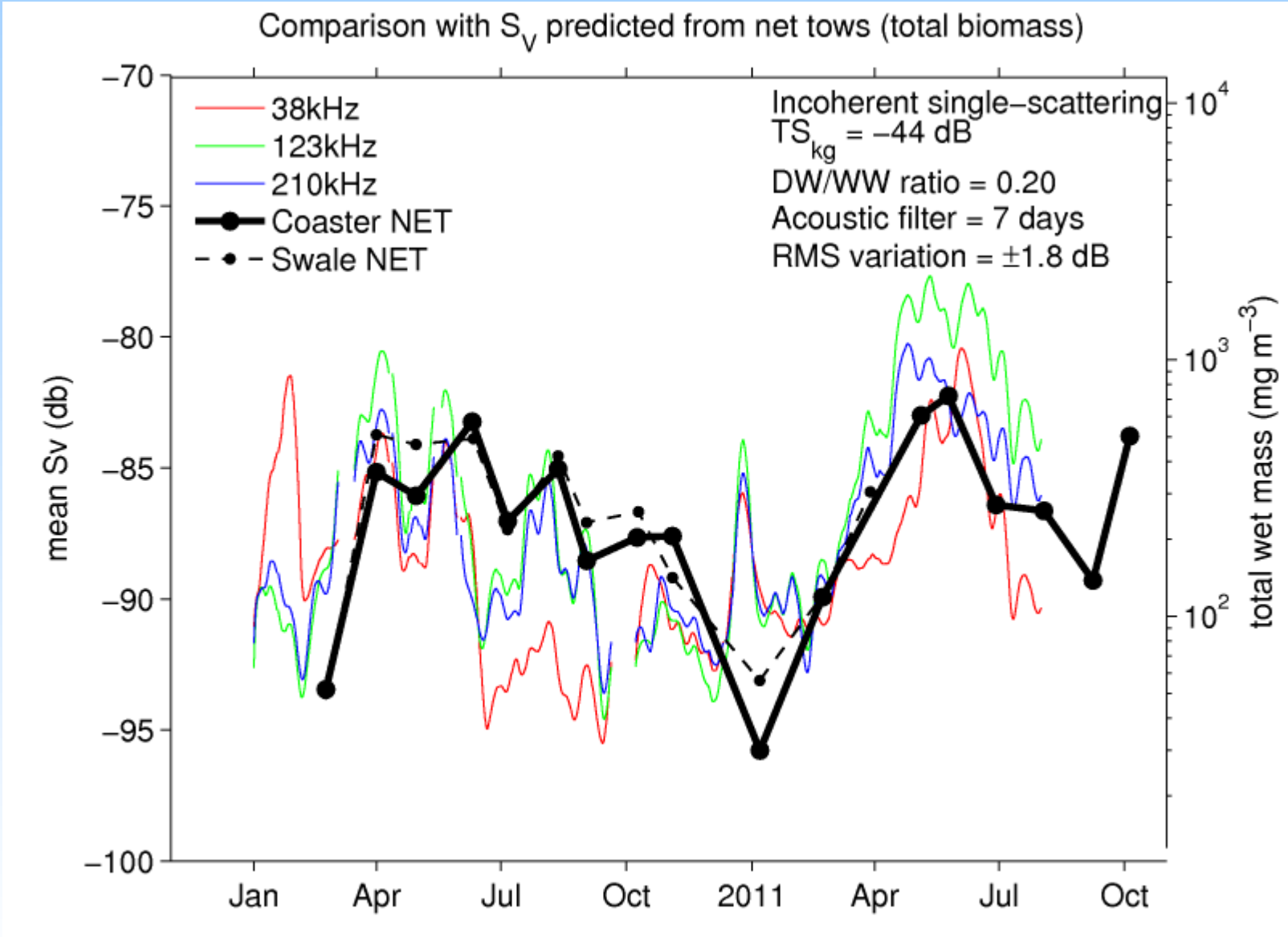
- @ Folger Pass:3 frequency upward-looking echo sounder
- Sampling @ 1Hz, since Nov 2009.
- 3 frequencies see different things...

Pack more info in using colour!

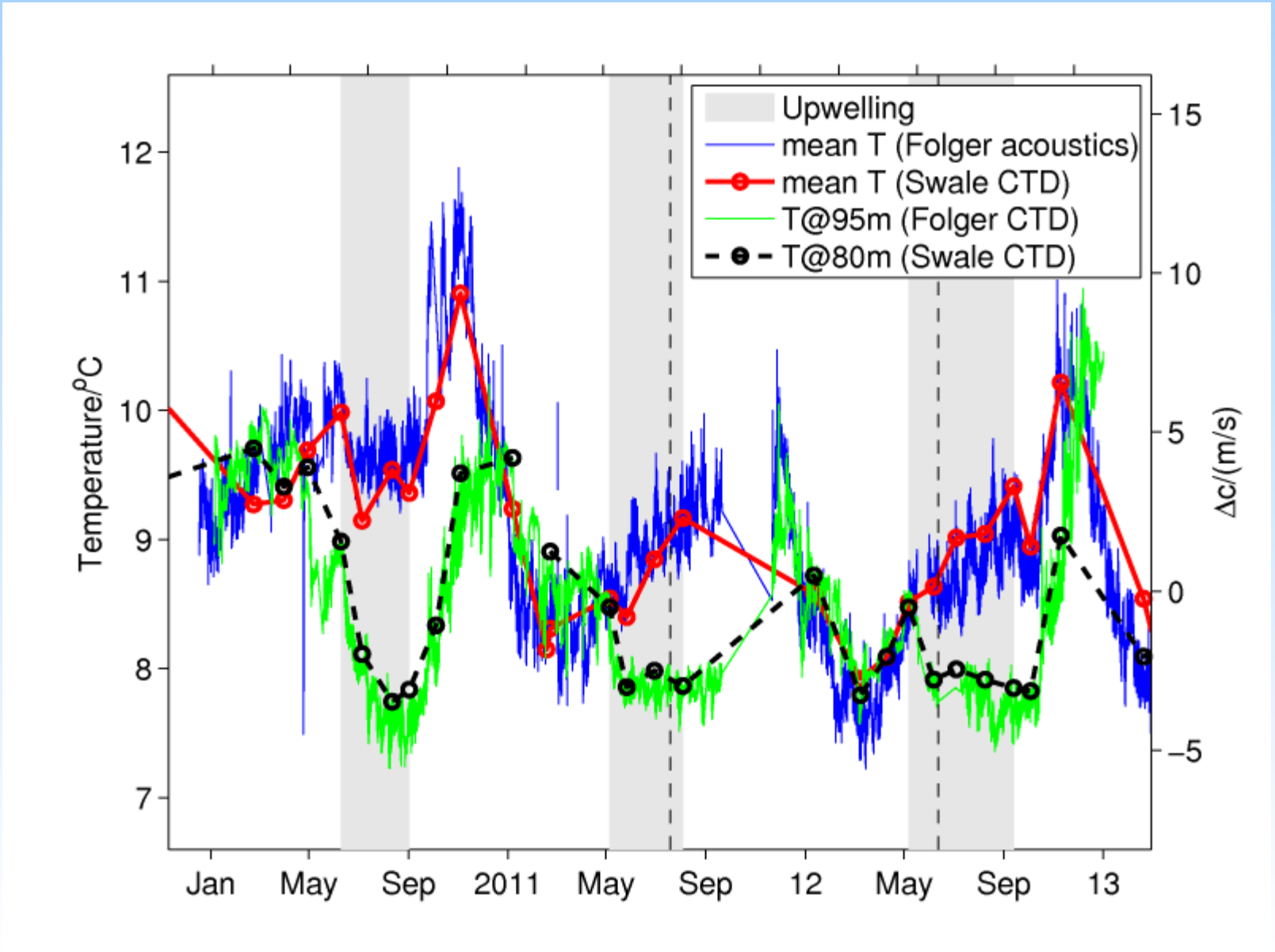



2010
2011
2012

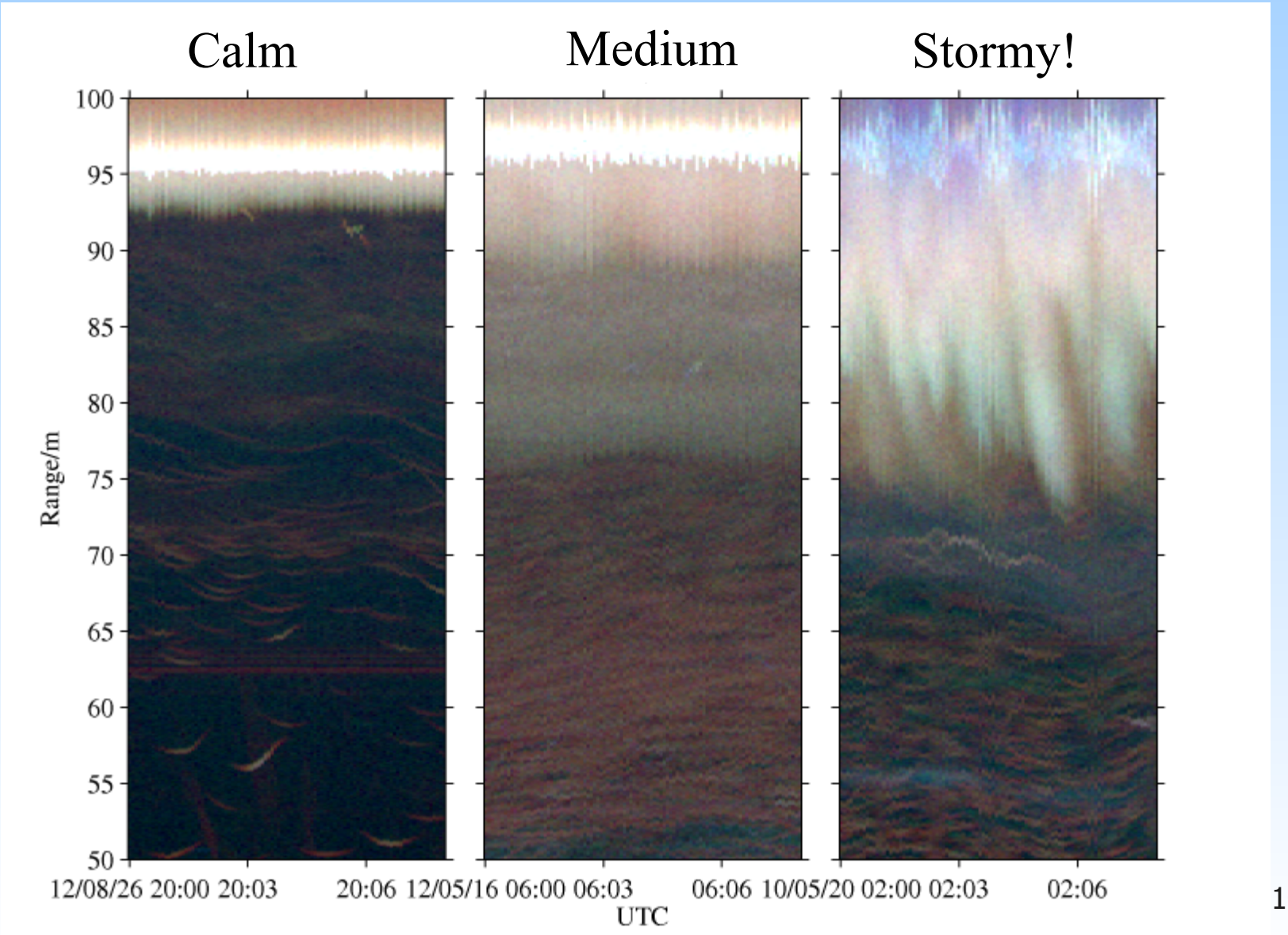
(1) Estimates of zooplankton biomass



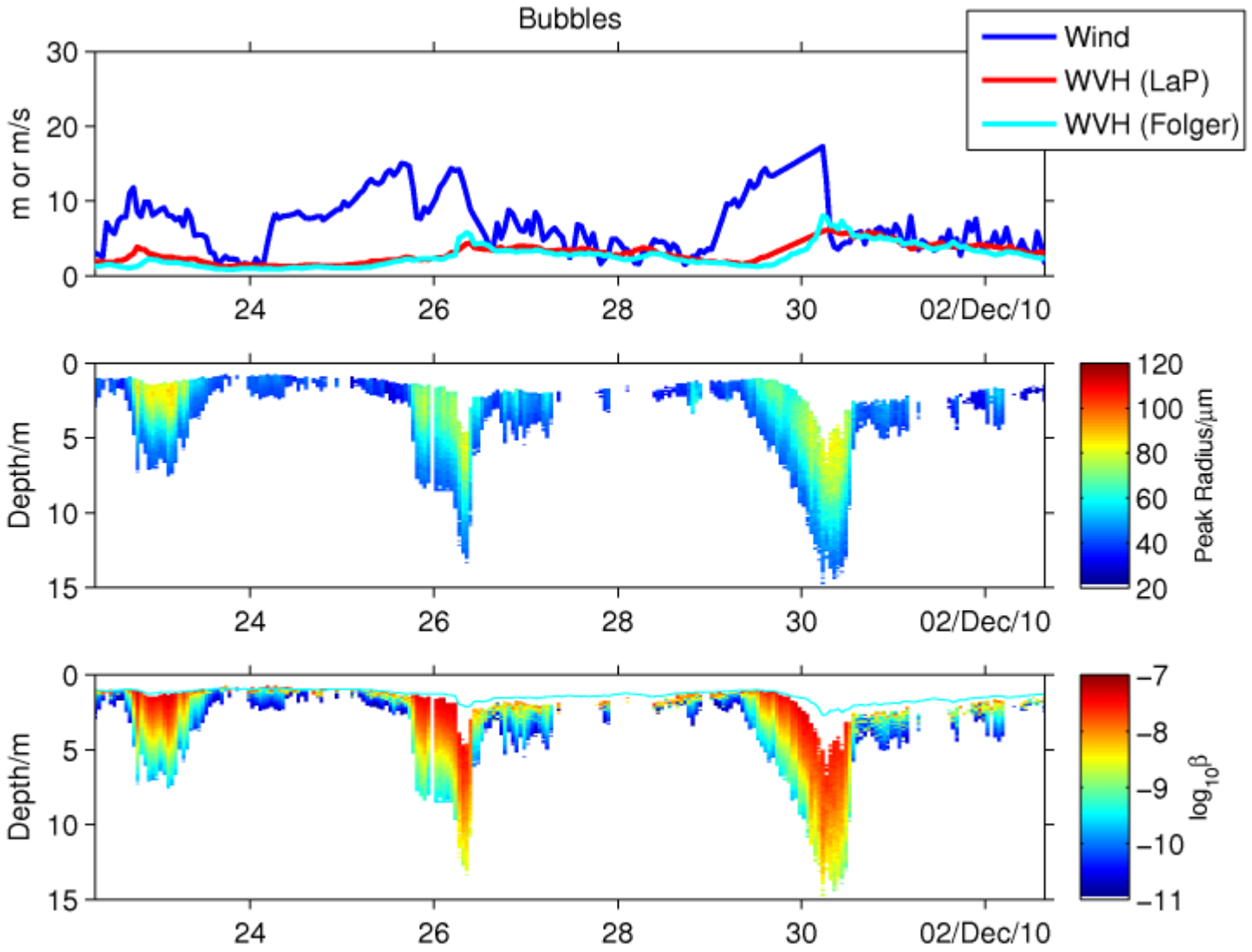
(2) Acoustic measure of mean water column T

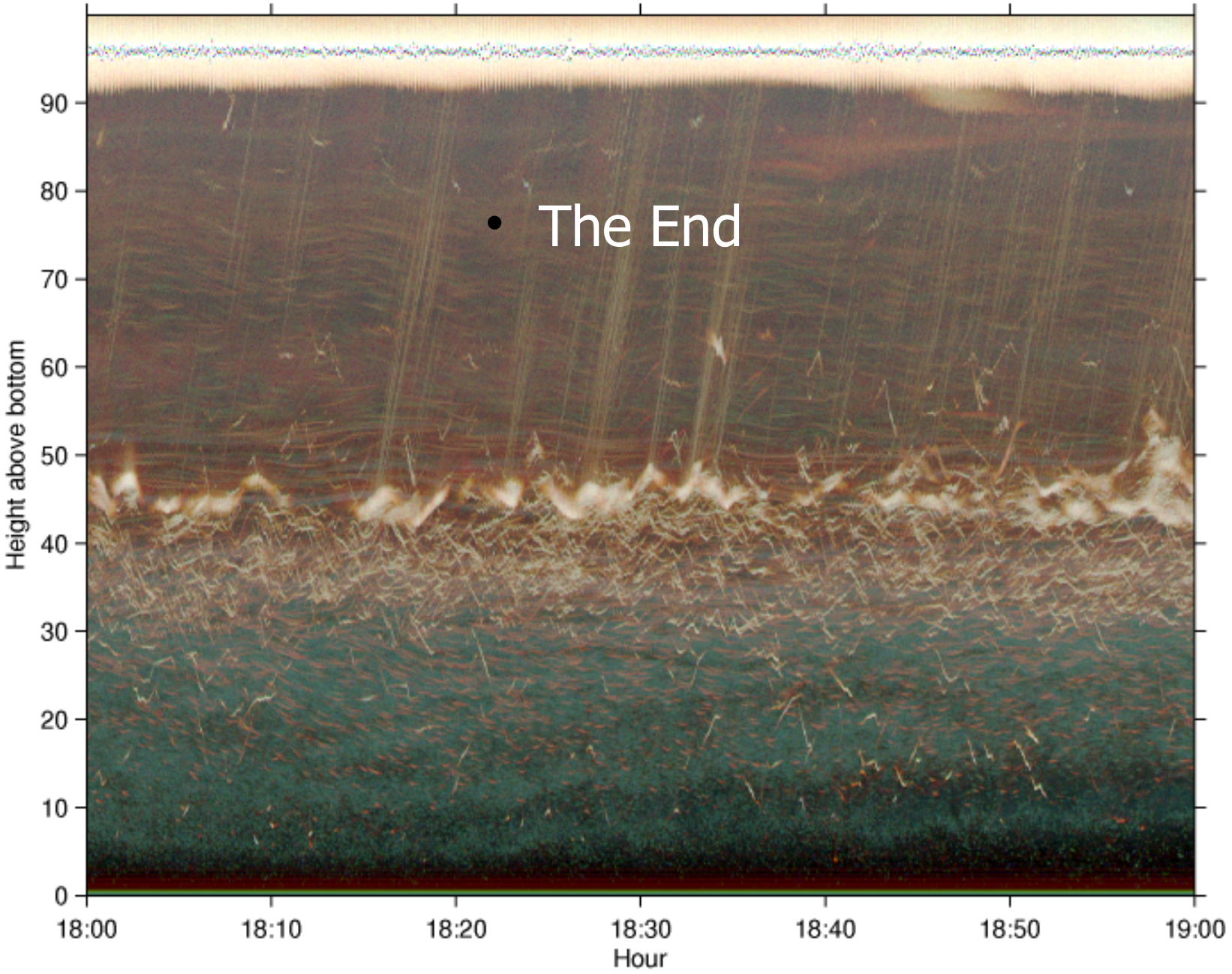


(3) Surface waves and bubble production

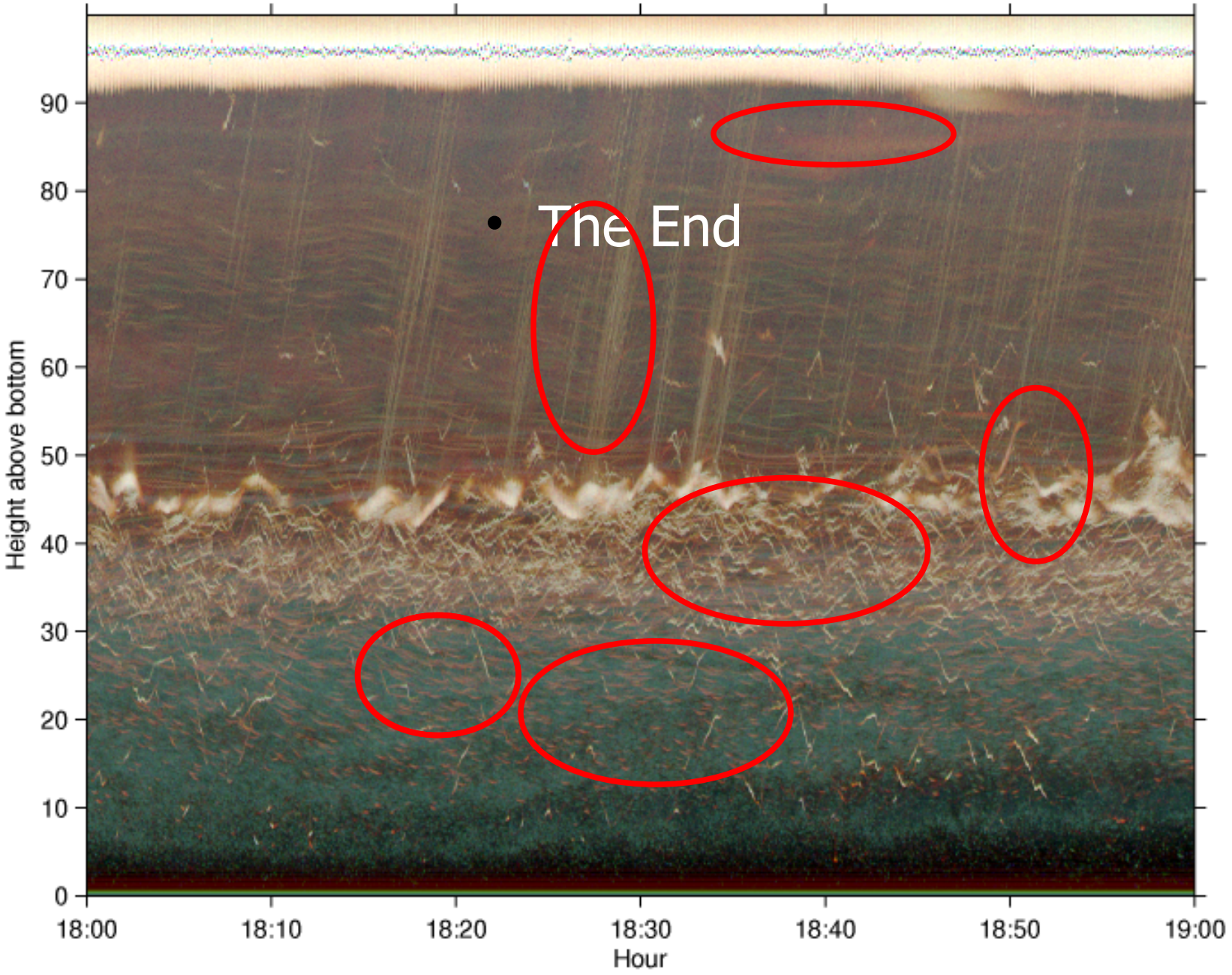


3)b – Inversion for size/amount of bubbles




Height above bottom
90
80
70
60
50
40
30
20
10
0
18:00
18:10
18:20
18:30
18:40
18:50
19:00
Hour

- The End


Height above bottom
90
80
70
60
50
40
30
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10
0
18:00
18:10
18:20
18:30
18:40
18:50
19:00
Hour

- The End