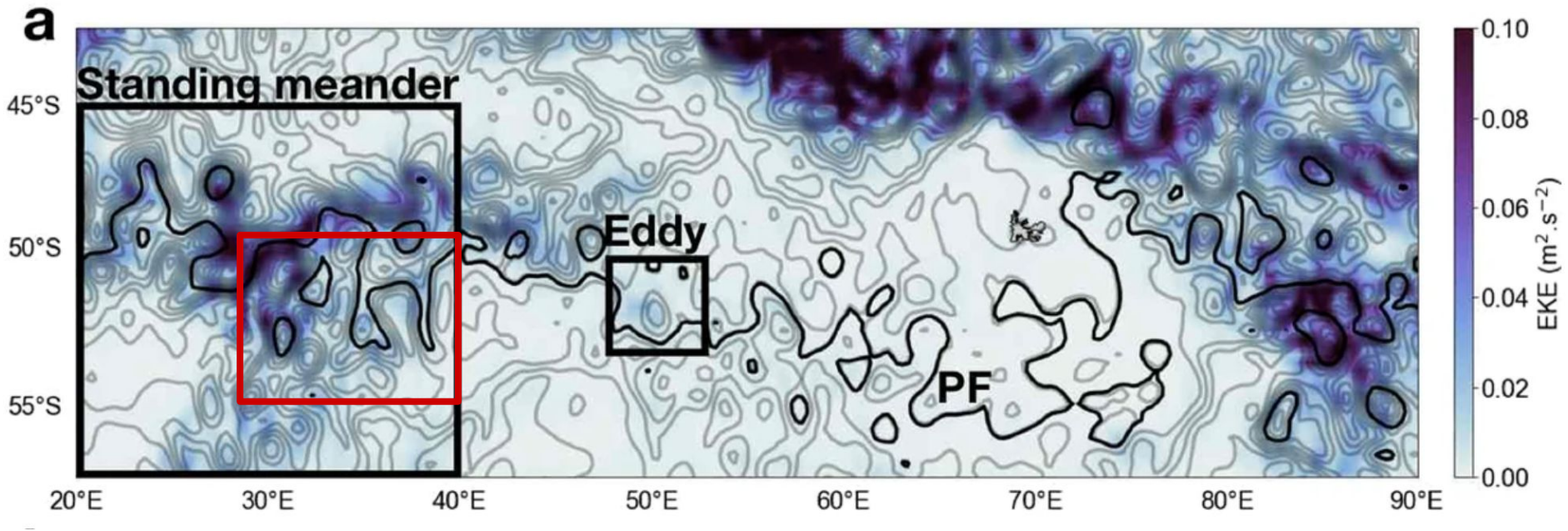
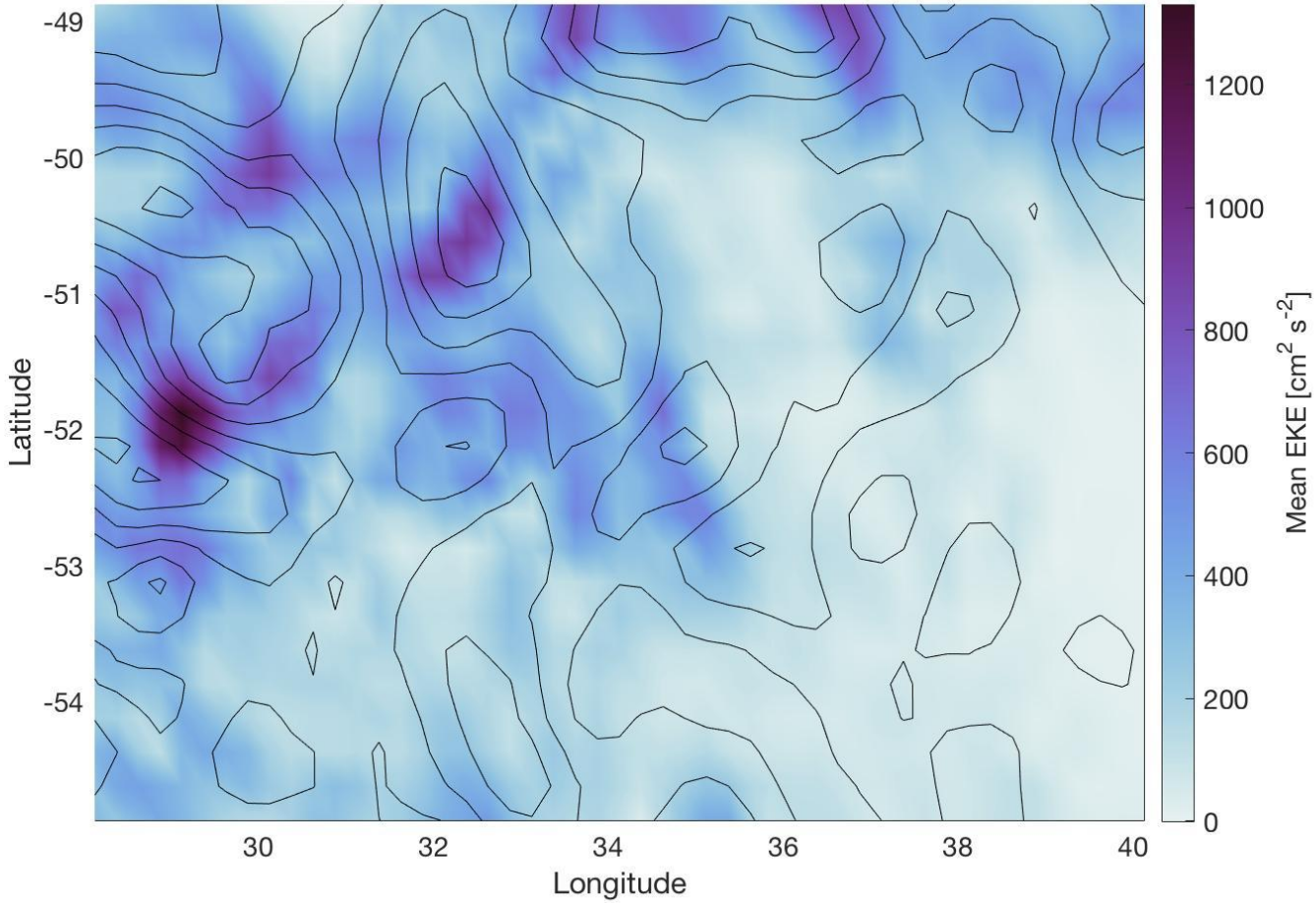
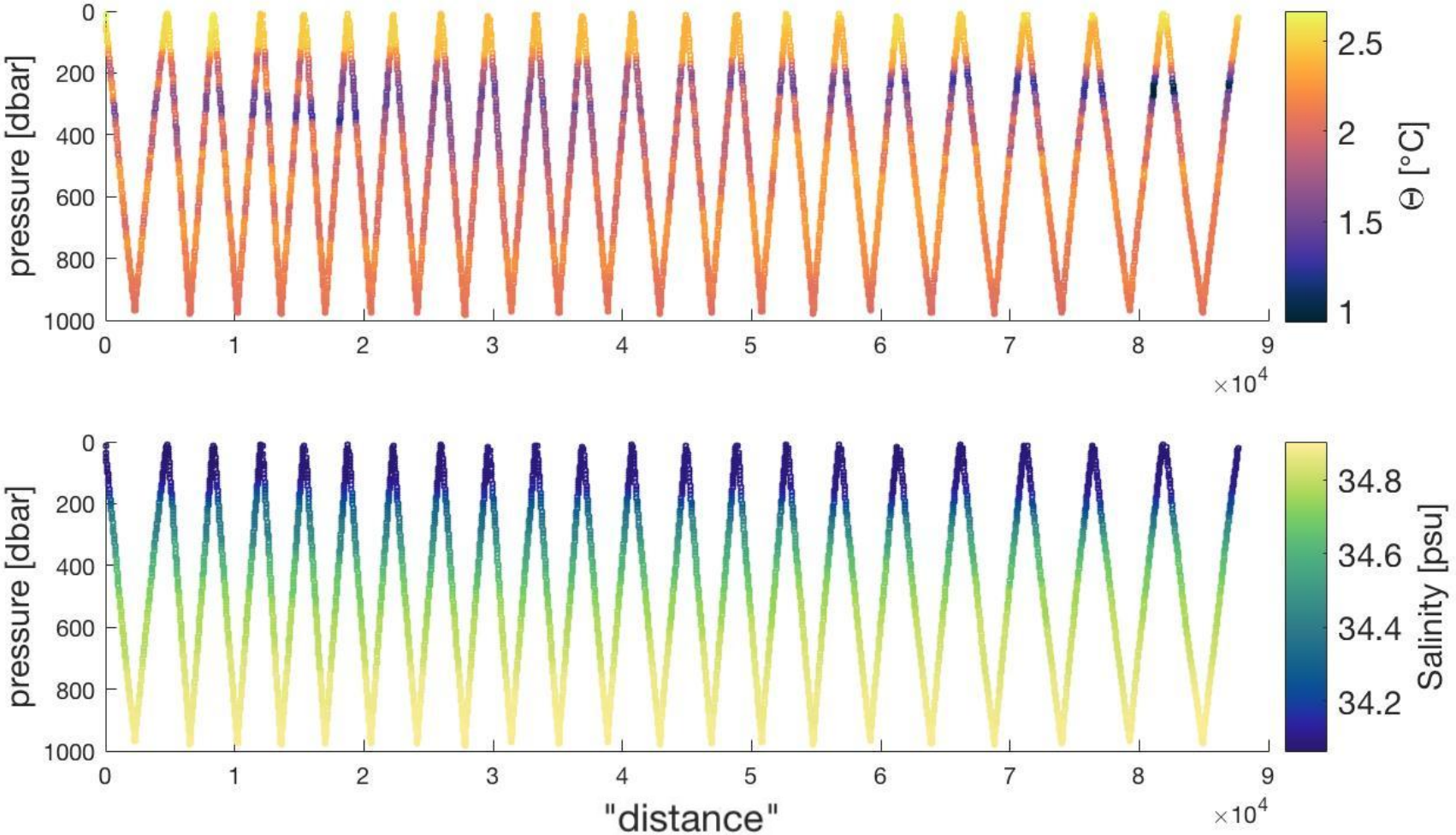
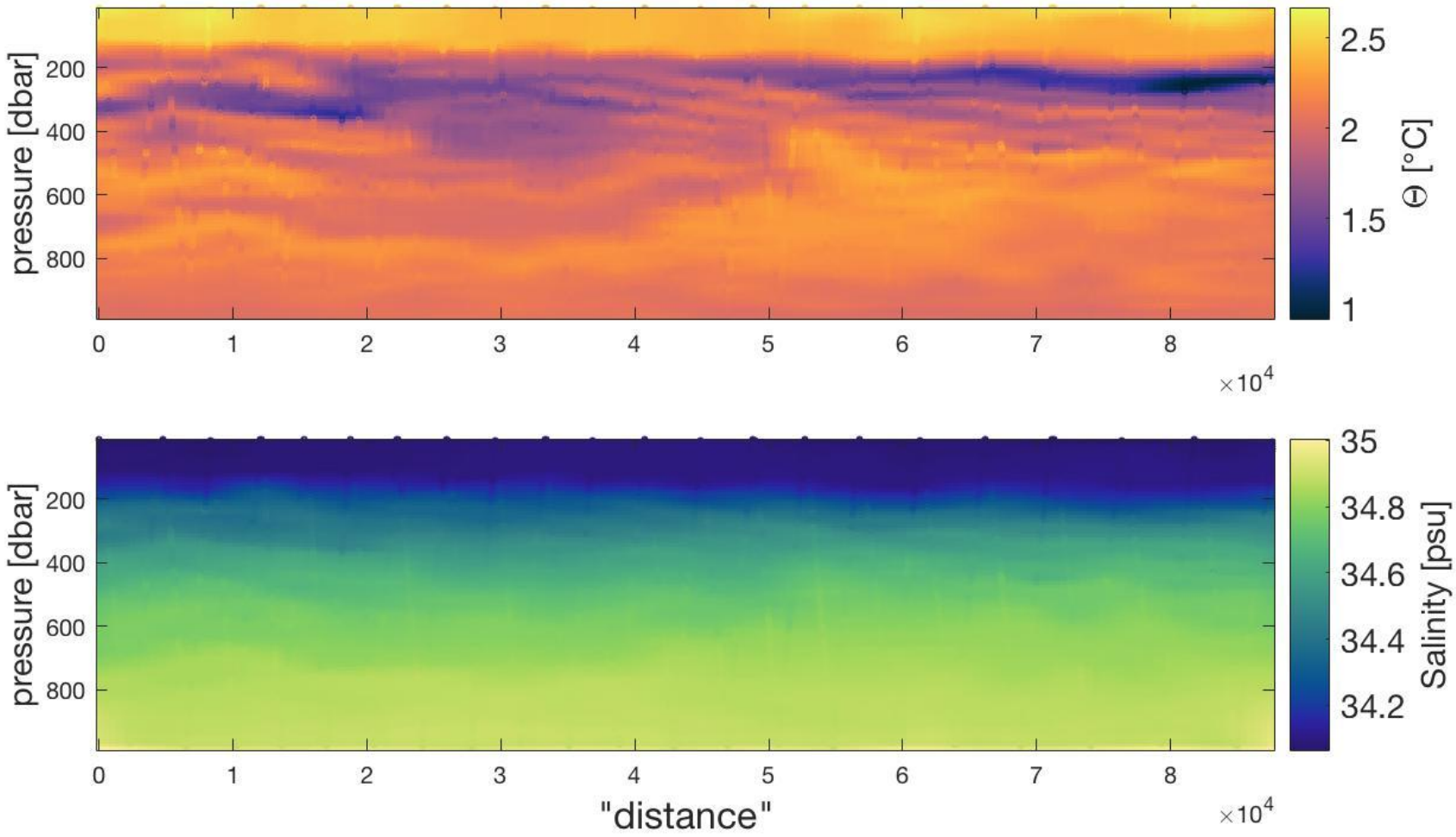
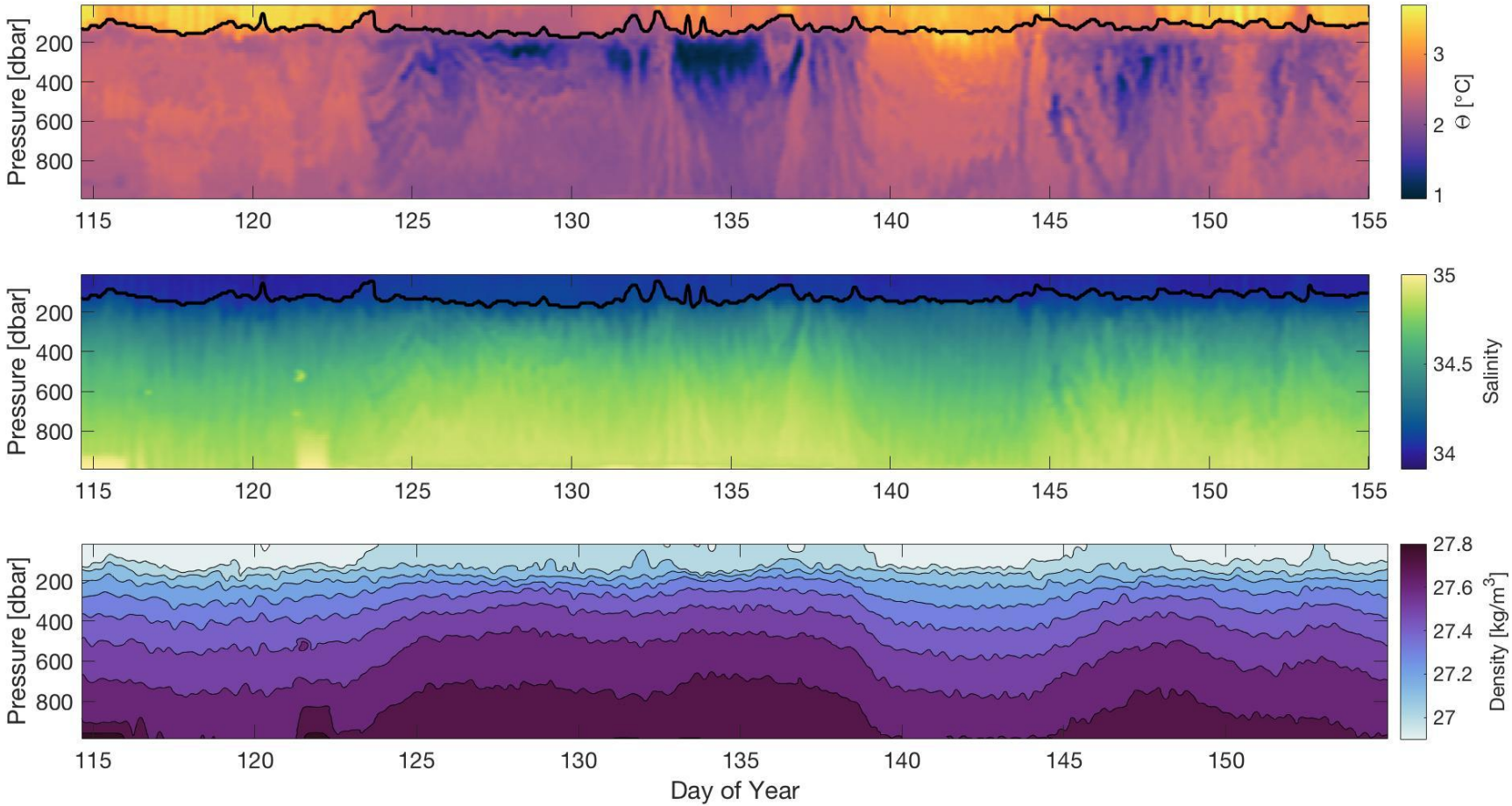


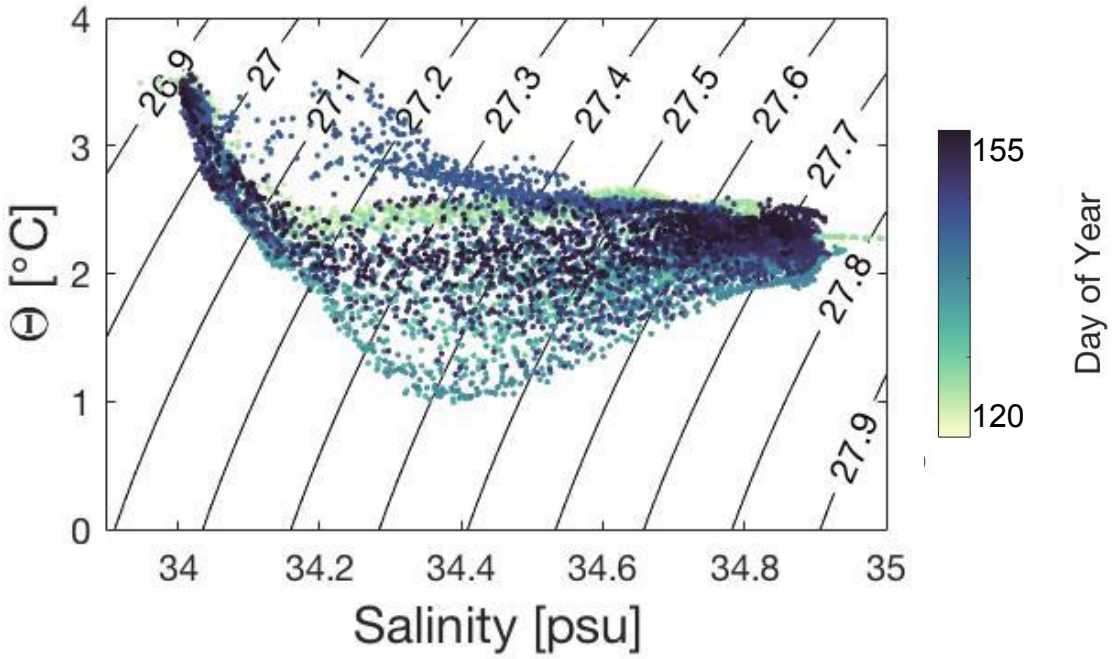
Siegelman et al. (2019)


-49
-50
-51
-52
-53
-54
Latitude
30
32
34
36
38
40
Longitude
1200
1000
800
600
400
200
0
Mean EKE [cm^2 s^{-2}]


pressure [dbar]
0
200
400
600
800
1000
0
1
2
3
4
5
6
7
8
9
×10^4
Θ [°C]
2.5
2
1.5
1
pressure [dbar]
0
200
400
600
800
1000
0
1
2
3
4
5
6
7
8
9
×10^4
"distance"
Salinity [psu]
34.8
34.6
34.4
34.2


pressure [dbar]
200
400
600
800
0
1
2
3
4
5
6
7
8
×10^4
2.5
2
1.5
1
Θ [°C]
pressure [dbar]
200
400
600
800
0
1
2
3
4
5
6
7
8
"distance"
×10^4
35
34.8
34.6
34.4
34.2
Salinity [psu]


Pressure [dbar]
200
400
600
800
115
120
125
130
135
140
145
150
155
Θ [°C]
3
2
1
Pressure [dbar]
200
400
600
800
115
120
125
130
135
140
145
150
155
Salinity
35
34.5
34
Pressure [dbar]
200
400
600
800
115
120
125
130
135
140
145
150
Day of Year
Density [kg/m3]
27.8
27.6
27.4
27.2
27

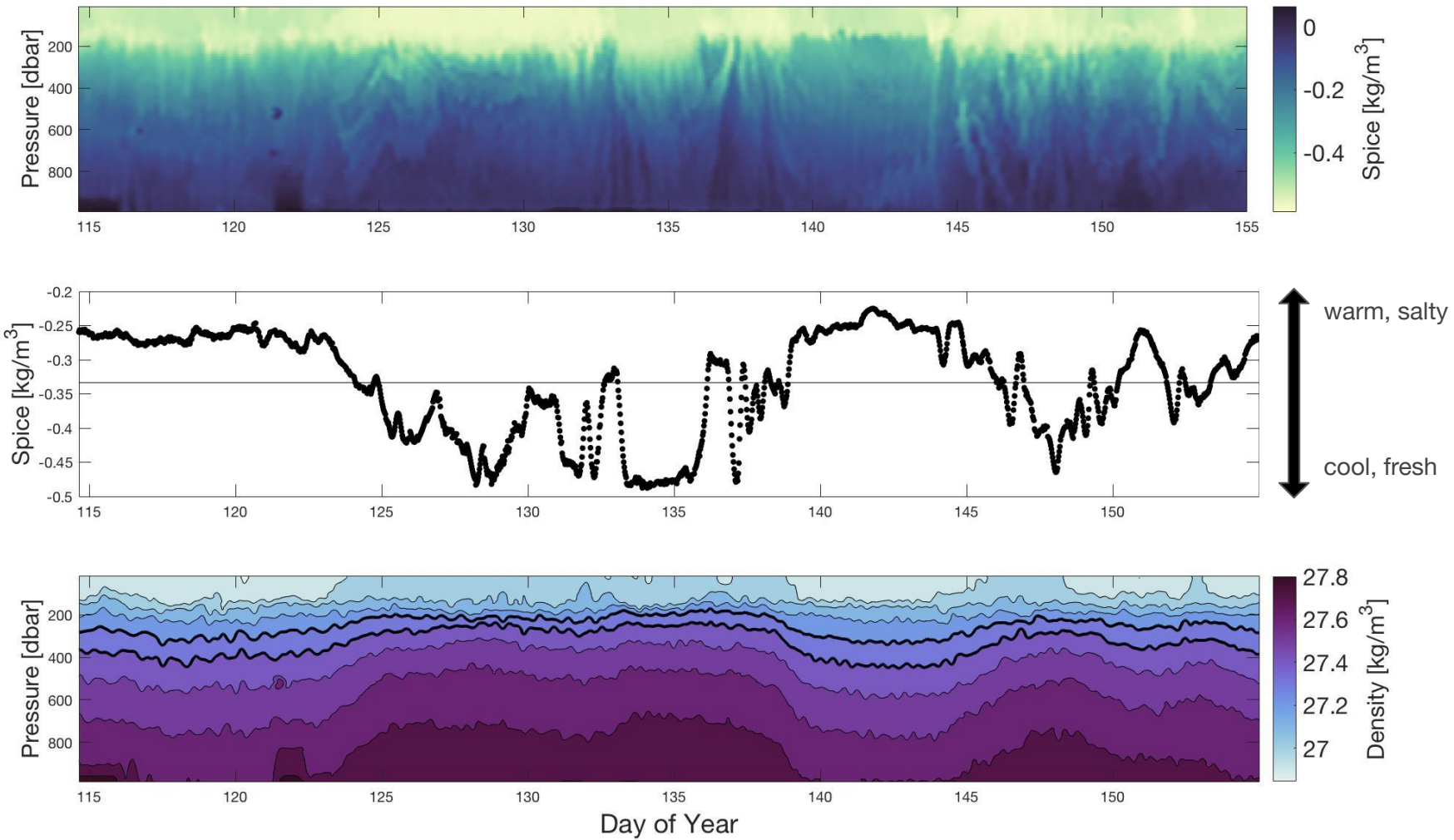


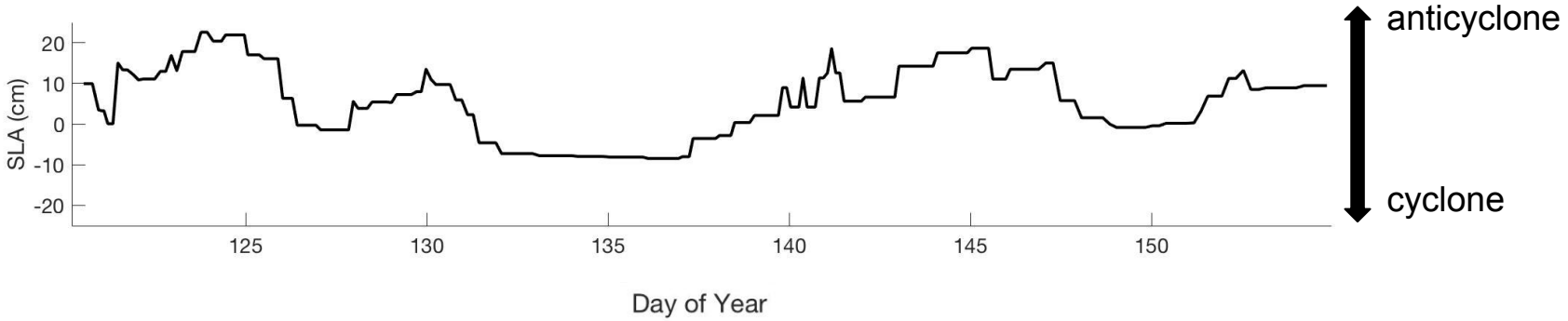
UCDW: salty, low O_2

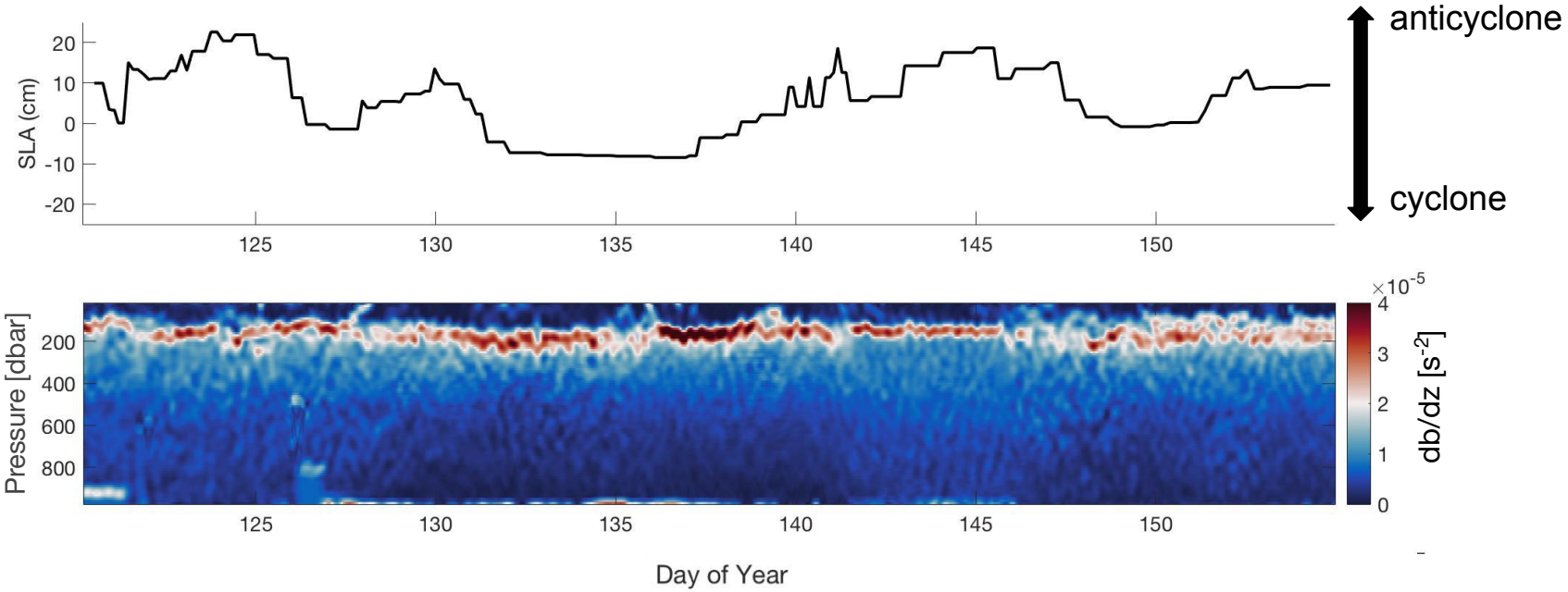
AAIW: fresh, cold, high O_2

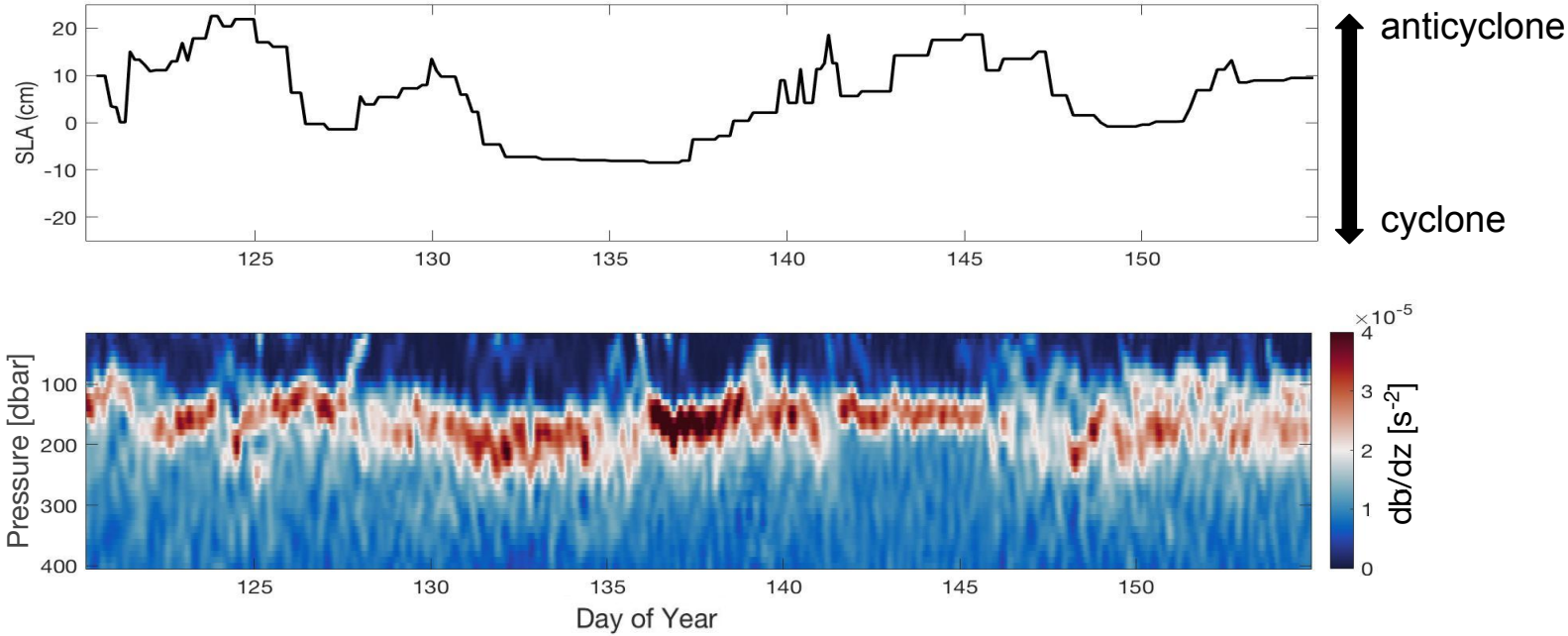
Positive spice: warm and salty

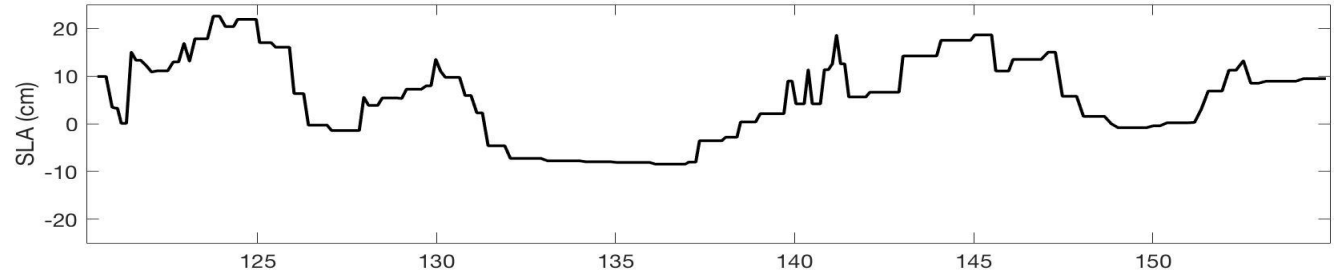
Negative spice: cold and fresh


Pressure [dbar]
200
400
600
800
115
120
125
130
135
140
145
150
155
0
-0.2
-0.4
Spice [kg/m3]
Spice [kg/m3]
-0.2
-0.25
-0.3
-0.35
-0.4
-0.45
-0.5
warm, salty
cool, fresh
Pressure [dbar]
27.8
27.6
27.4
27.2
27
Density [kg/m3]
Day of Year


anticyclone
cyclone
SLA (cm)
20
10
0
-10
-20
125
130
135
140
145
150
Day of Year

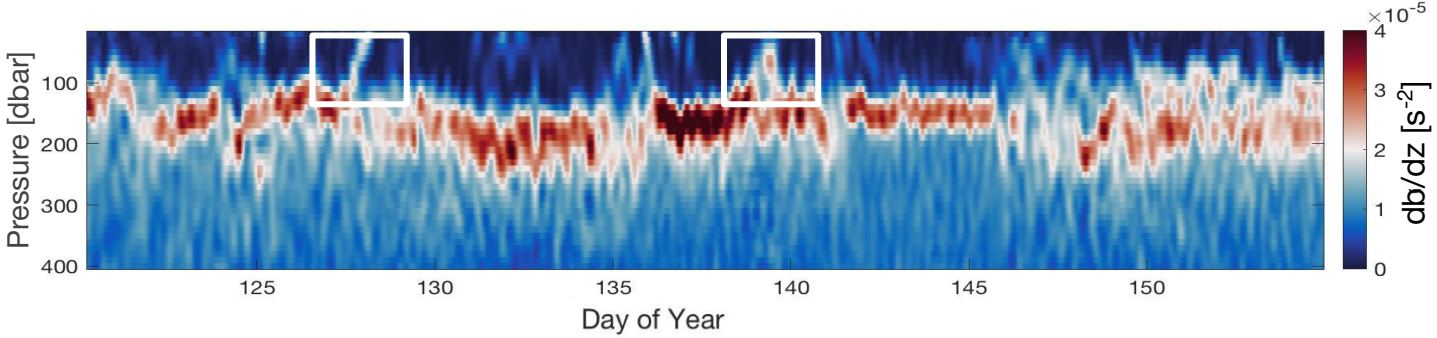

anticyclone
cyclone
SLA (cm)
20
10
0
-10
-20
125
130
135
140
145
150
Pressure [dbar]
200
400
600
800
×10^-5
4
3
2
1
0
db/dz [s^-2]
Day of Year

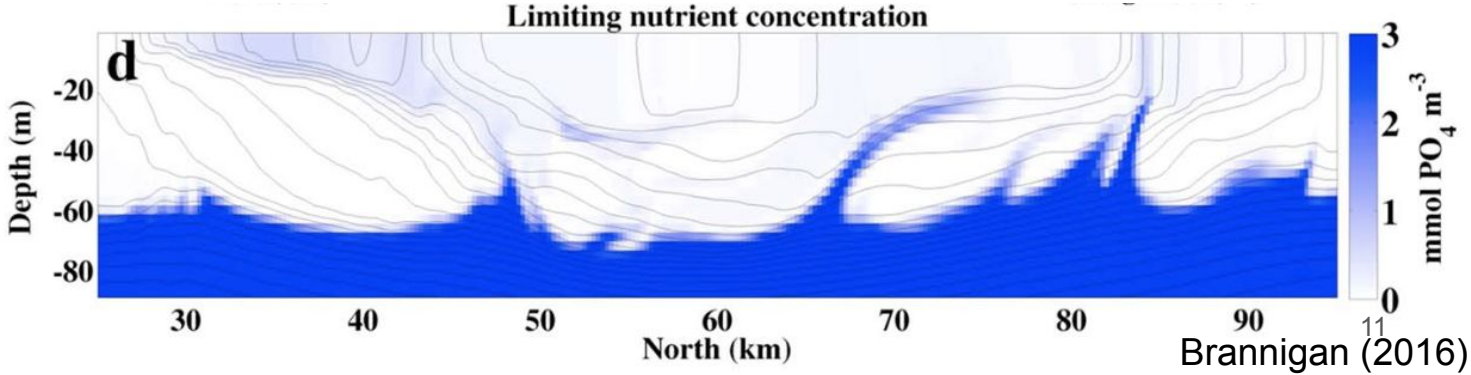

SLA (cm)
20
10
0
-10
-20
125
130
135
140
145
150
anticyclone
cyclone
Pressure [dbar]
100
200
300
400
Day of Year
×10^-5
4
3
2
1
0
db/dz [s^-2]



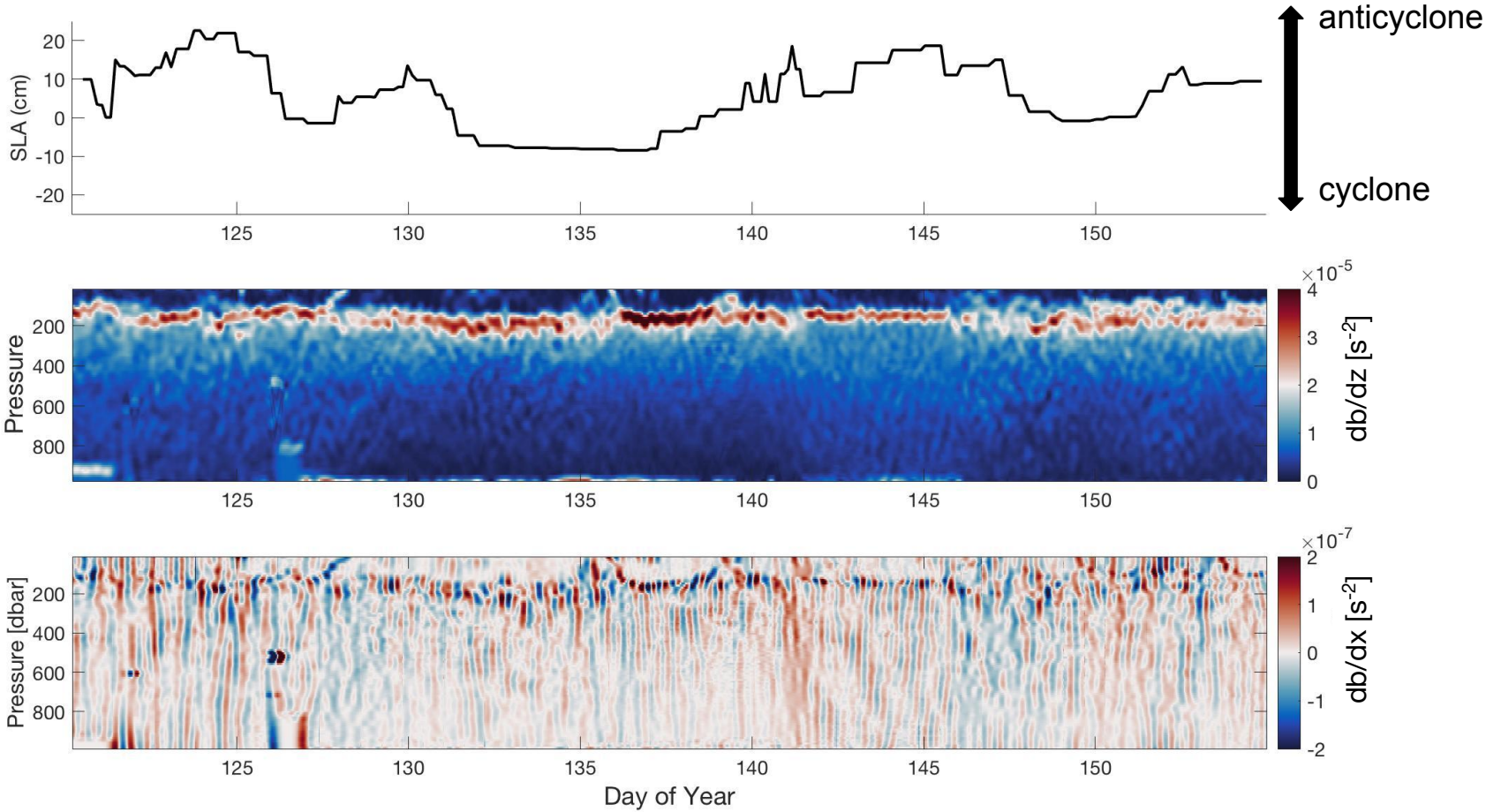
anticyclone

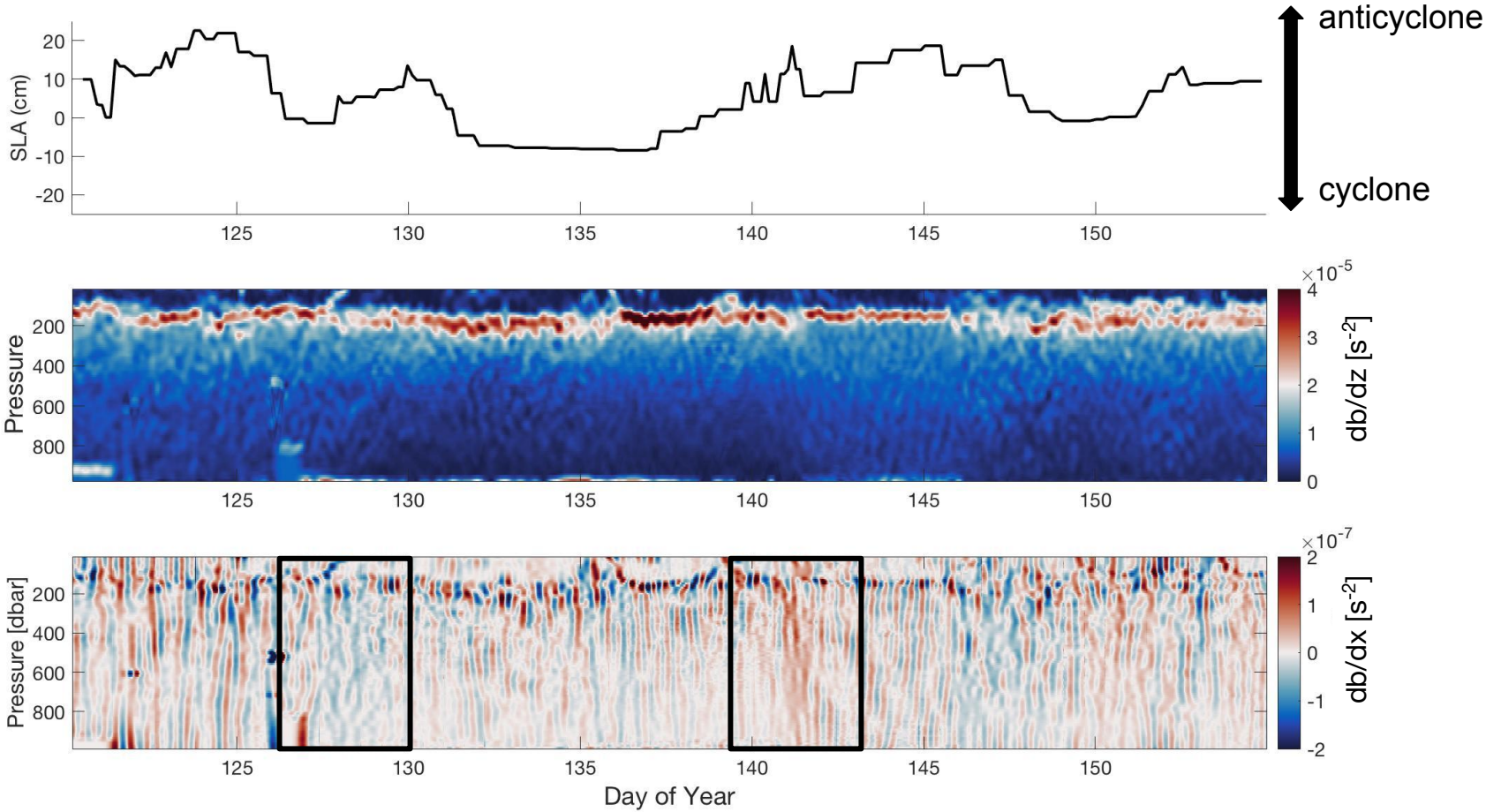
cyclone



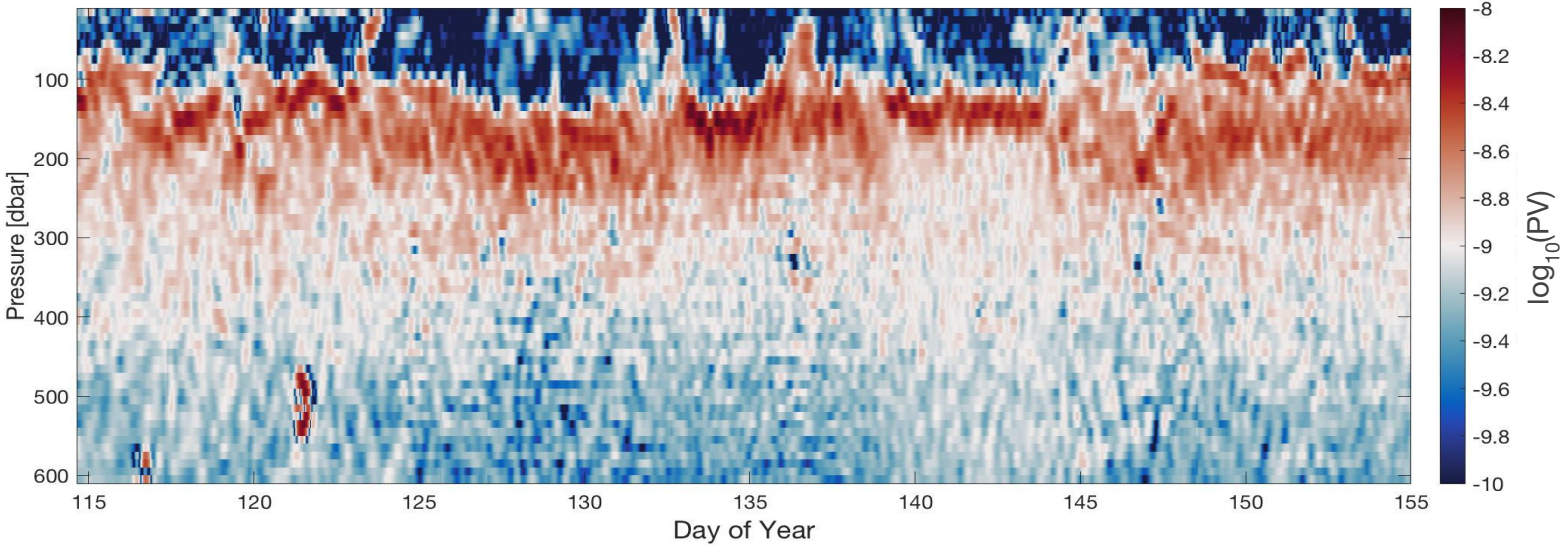


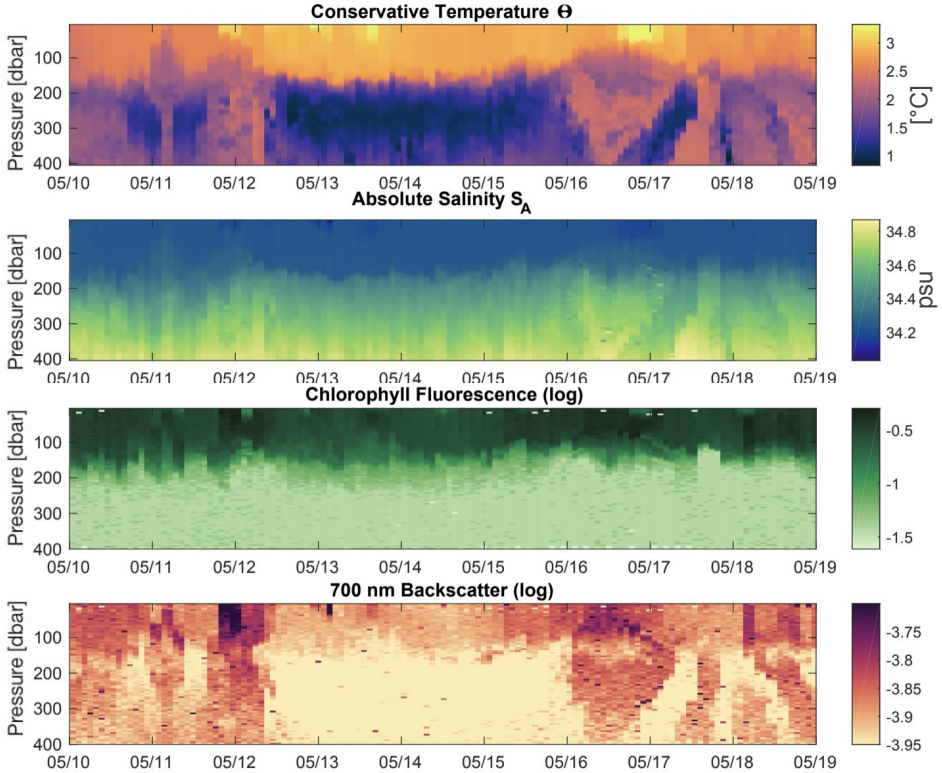
Brannigan (2016)

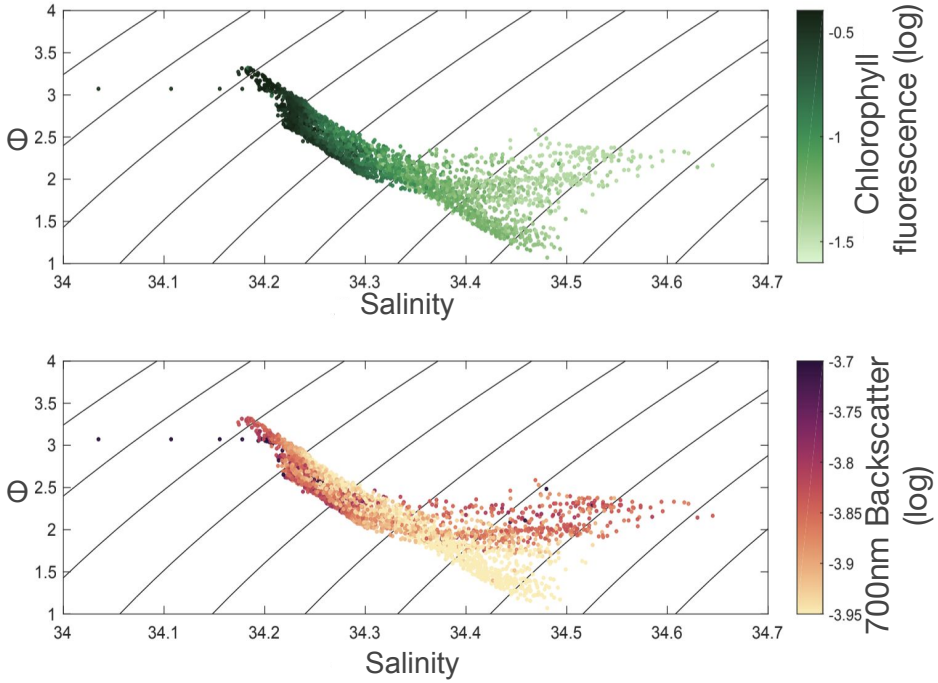

anticyclone
cyclone
SLA (cm)
20
10
0
-10
-20
125
130
135
140
145
150
Pressure
200
400
600
800
×10^-5
4
3
2
1
0
db/dz [s^-2]
Pressure [dbar]
×10^-7
2
1
0
-1
-2
db/dx [s^-2]
Day of Year

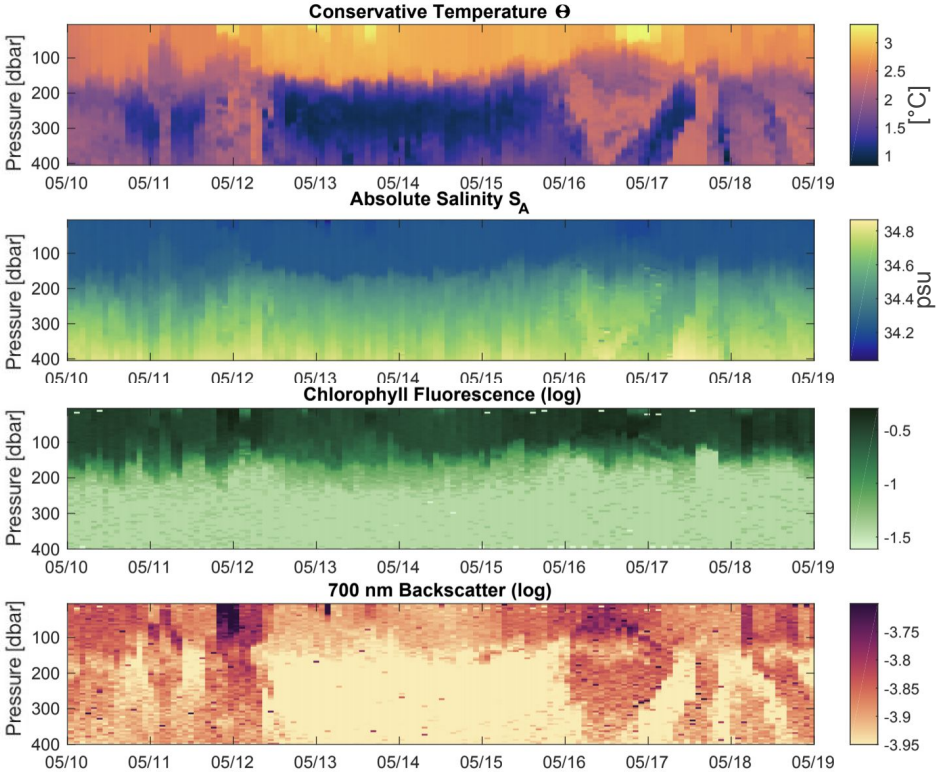

anticyclone
cyclone
SLA (cm)
20
10
0
-10
-20
125
130
135
140
145
150
Pressure
200
400
600
800
×10^-5
4
3
2
1
0
db/dz [s^-2]
Pressure [dbar]
×10^-7
2
1
0
-1
-2
db/dx [s^-2]
Day of Year

Potential Vorticity (high strain/EKE region)




Conservative Temperature Θ
Pressure [dbar]
100
200
300
400
05/10
05/11
05/12
05/13
05/14
05/15
05/16
05/17
05/18
05/19
3
2.5
2
1.5
1
[°C]
Absolute Salinity S_A
34.8
34.6
34.4
34.2
psu
Chlorophyll Fluorescence (log)
-0.5
-1
-1.5
700 nm Backscatter (log)
-3.75
-3.8
-3.85
-3.9
-3.95

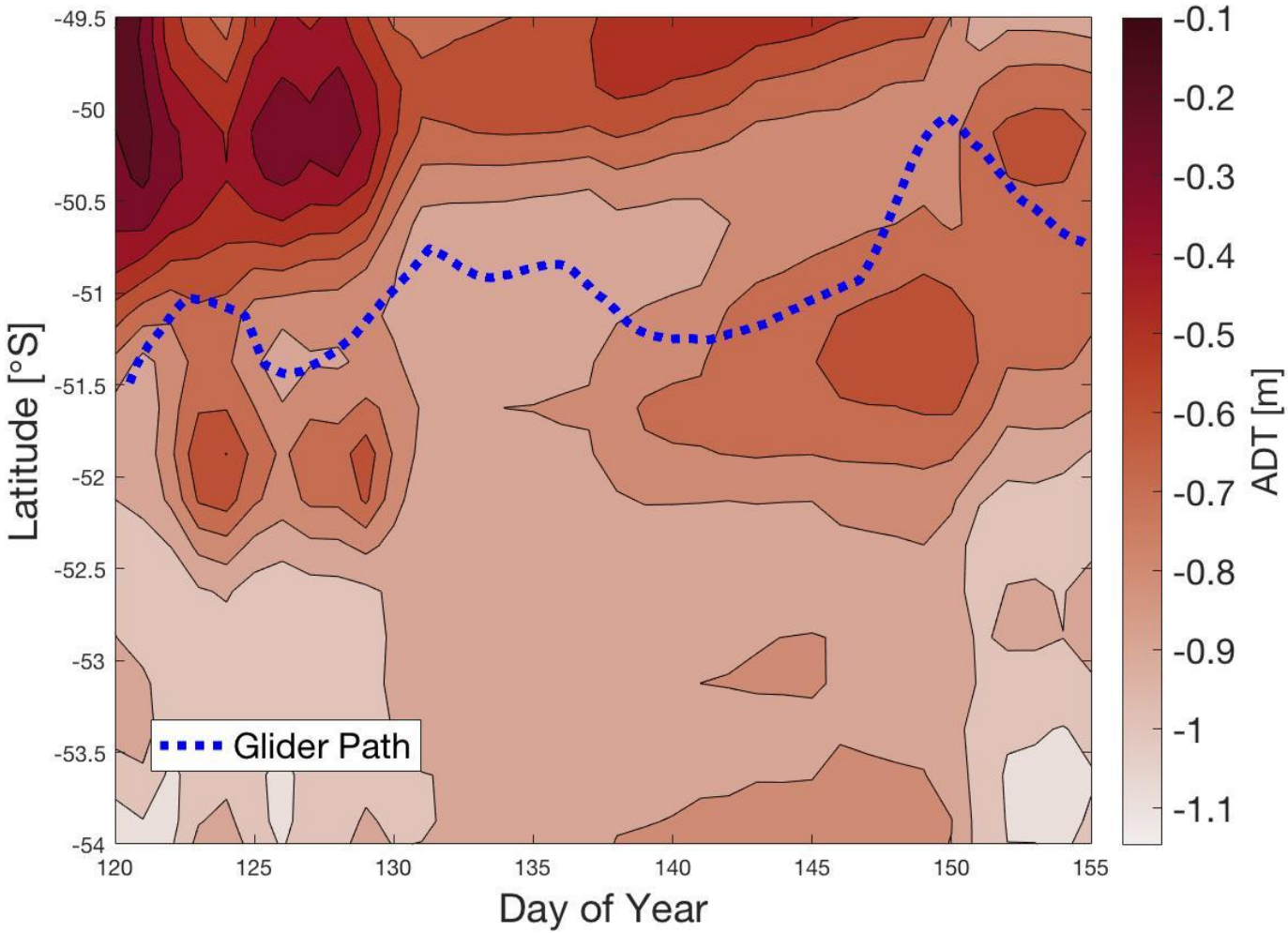

Θ
4
3.5
3
2.5
2
1.5
1
34
34.1
34.2
34.3
34.4
34.5
34.6
34.7
Salinity
-0.5
-1
-1.5
Chlorophyll fluorescence (log)
700nm Backscatter (log)
-3.7
-3.75
-3.8
-3.85
-3.9
-3.95

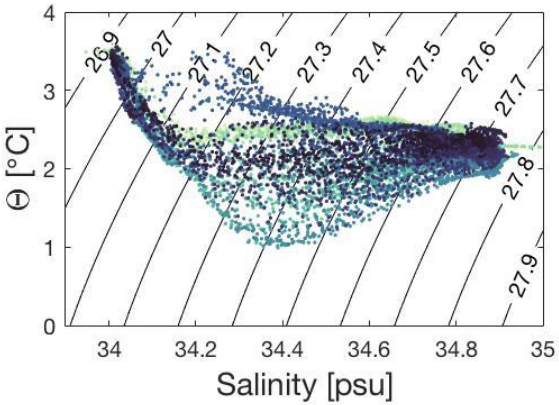


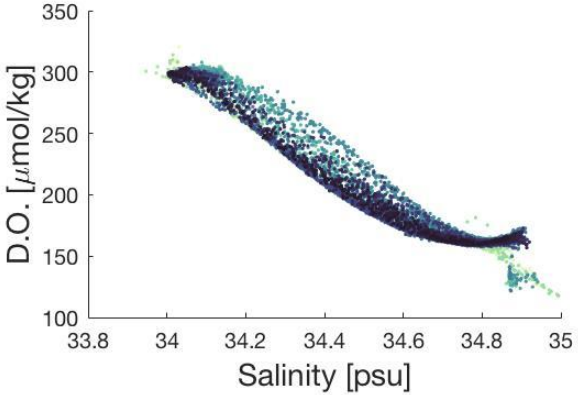
Next Steps

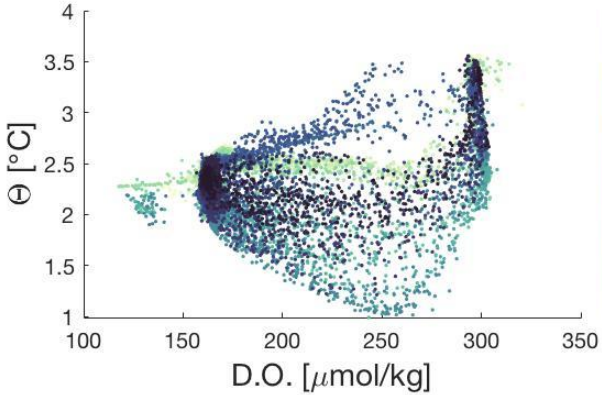
- Quality control and share final dataset (including BGC data) for SG660
- Recover data from SG659
- Develop figures for an overall characterization of submesoscale variability in the region

Extra slides

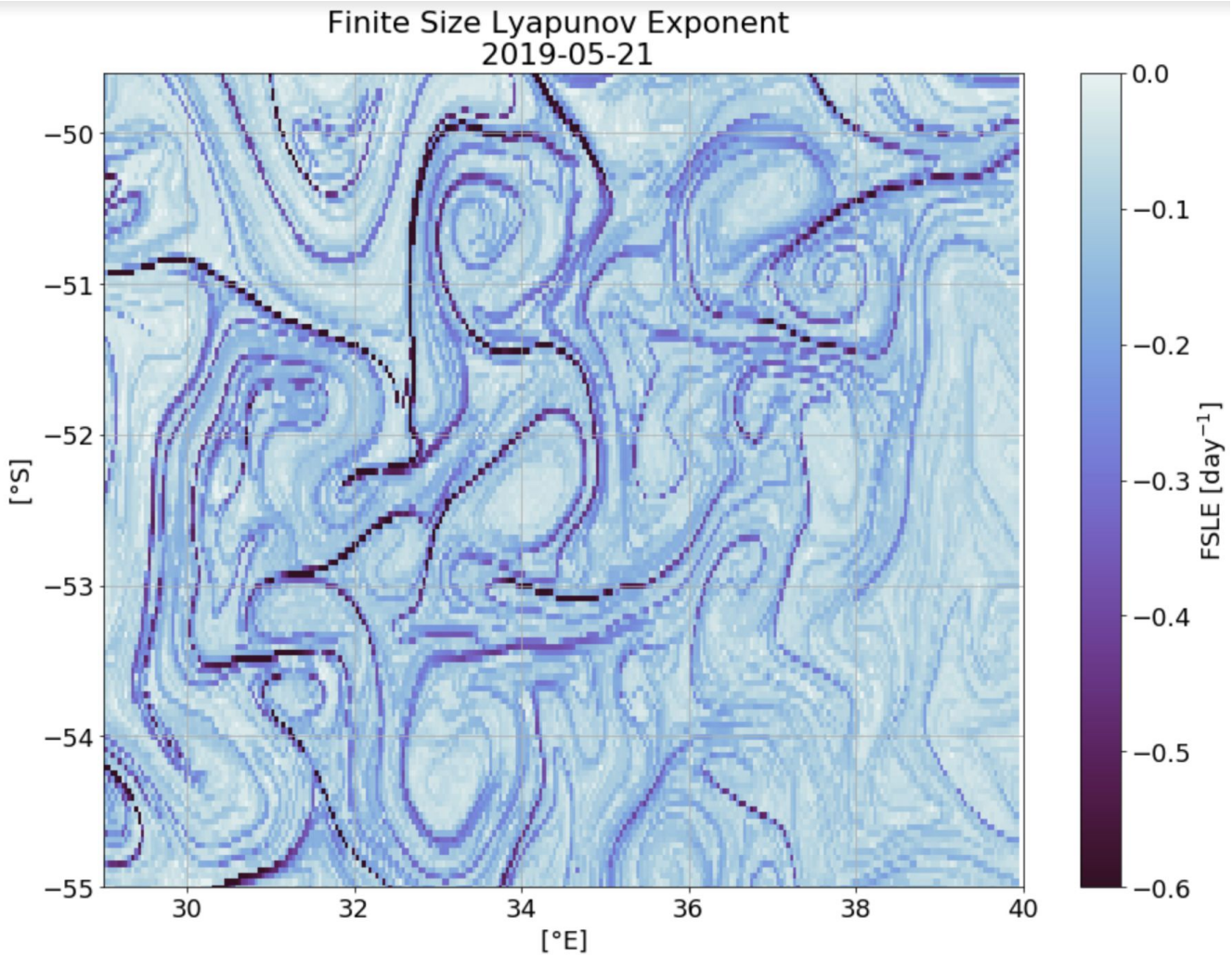

Latitude [°S]
-49.5
-50
-50.5
-51
-51.5
-52
-52.5
-53
-53.5
-54
120
125
130
135
140
145
150
155
Day of Year
Glider Path
ADT [m]
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1


Θ [°C]
Salinity [psu]
26.9
27
27.1
27.2
27.3
27.4
27.5
27.6
27.7
27.8
27.9

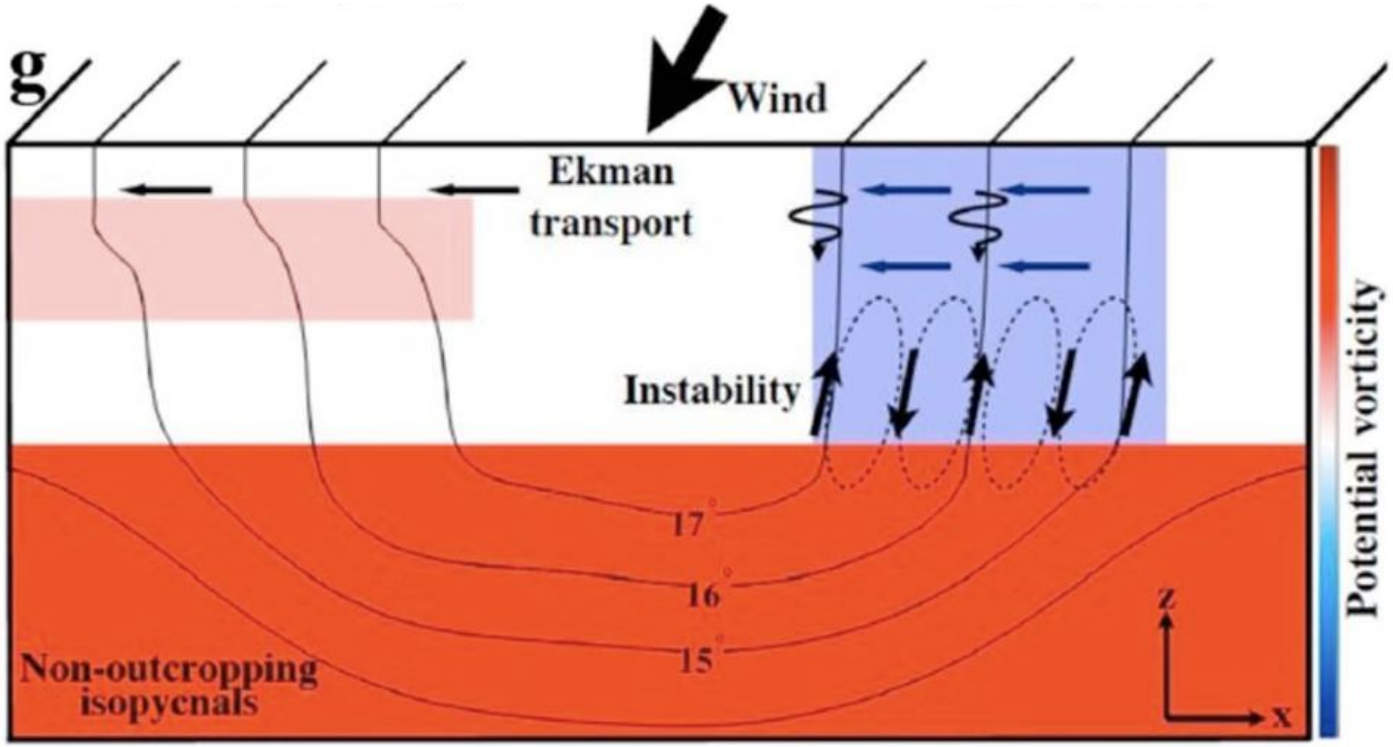

D.O. [μmol/kg]
Salinity [psu]


Θ [°C]
D.O. [μmol/kg]

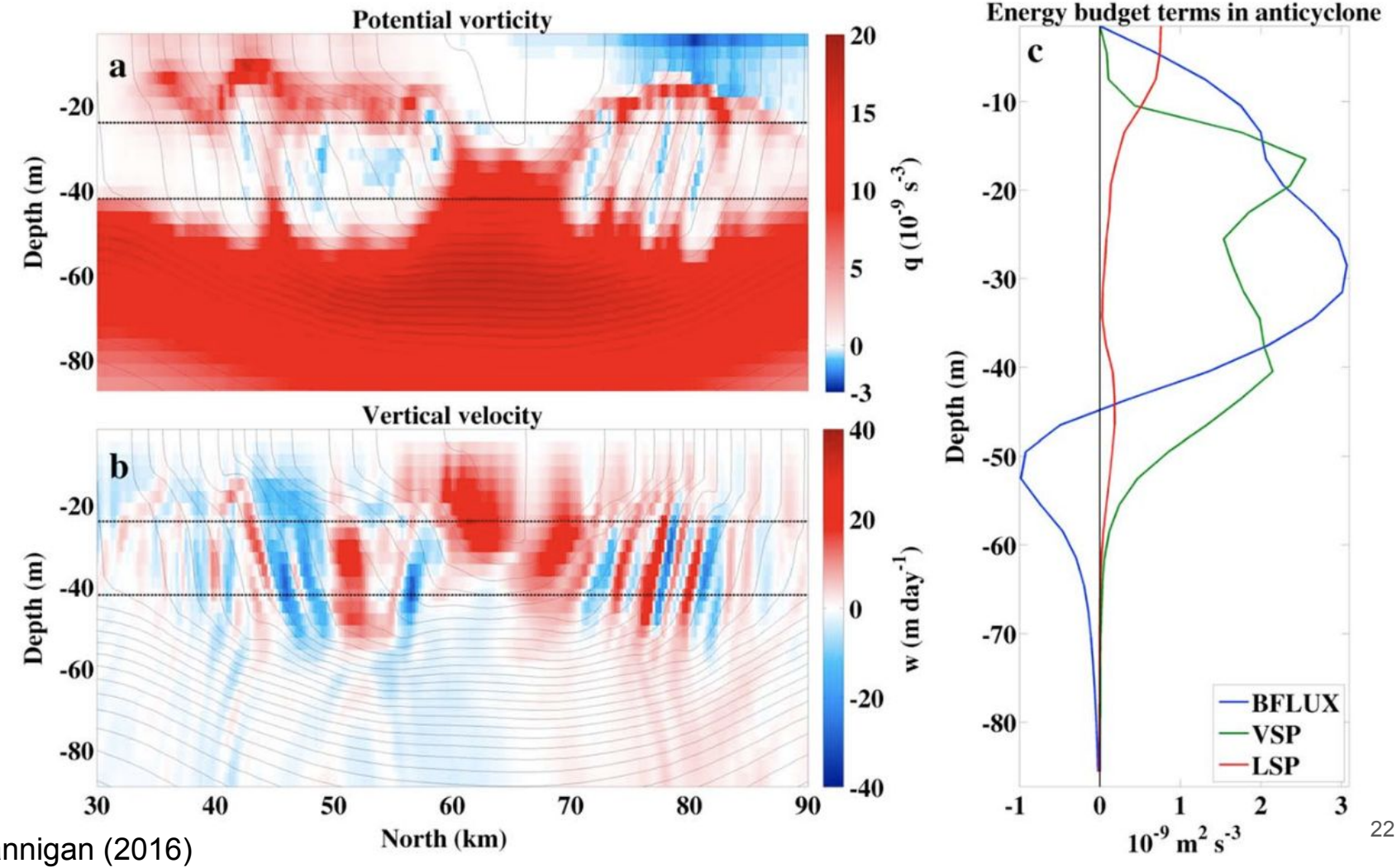

120
155
Day of Year



$$\lambda(d_0, d_f) = \frac{1}{\tau} log(\frac{d_f}{d_0}),$$



Brannigan (2016)



Brannigan (2016)

Potential Vorticity (downstream)