

Supplementary Information

Supplementary Information 1. Errors (%) of the density (Den.), ECDa and S.Th at each strain are corresponded in the Figure 3 for depths of 10-80 m.

10 m	Den.	ECDa	S.Th
0	0.6	1.4	0.9
0.5	0.6	1.0	1.1
1	0.6	0.3	0.9
1.5	0.6	0.4	0.9
2	0.6	0.5	0.9
2.5	0.6	0.7	1.0
3	0.6	0.4	0.9

50 m	Den.	ECDa	S.Th
0	0.1	0.9	0.6
0.5	0.1	0.8	0.7
1	0.1	1.0	0.9
1.5	0.1	1.0	1.0
2	0.1	1.0	1.0
2.5	0.1	1.0	1.0
3	0.1	1.0	1.0
3.5	0.1	1.0	1.0
4	0.1	0.6	1.1

20 m	Den.	ECDa	S.Th
0	0.2	0.9	0.5
0.5	0.7	0.8	0.6
1	0.3	0.9	0.6
1.5	0.3	0.8	0.6
2	0.3	1.0	0.7
2.5	0.3	1.0	0.6
3.5	0.4	1.1	0.6
4.5	0.4	1.2	0.6

60 m	Den.	ECDa	S.Th
0	0.02	0.4	1.1
0.5	0.01	0.3	1.2
1	0.02	0.3	1.1
1.5	0.03	0.5	1.2
2	0.05	0.3	1.3
2.5	0.07	0.4	1.3
3	0.07	0.2	1.3

30 m	Den.	ECDa	S.Th
0	0.3	0.3	1.2
0.5	0.2	0.3	1.1
1	0.3	0.3	1.2
1.5	0.2	0.4	1.1
2	0.2	0.2	1.2
2.5	0.2	0.3	1.1
3	0.2	0.2	1.2
4	0.2	0.6	1.1

70 m	Den.	ECDa	S.Th
0	0.1	0.8	1.2
0.5	0.1	0.7	1.2
1	0.1	0.6	1.2
1.5	0.1	0.5	1.2
2	0.1	13.6	1.2

80 m	Den.	ECDa	S.Th
0	0.1	0.9	1.6
0.5	0.1	0.9	1.4
1	0.1	0.9	1.4
1.5	0.1	0.9	1.5
2	0.1	0.9	1.5

Supplementary Information 2. Errors (%) of the T-P and C-P at each strain are corresponded in the Figure 5 for depths of 10-80 m.

10 m	T-P	C-P
0	0.6	1.9
0.5	0.6	1.5
1	0.6	3.6
1.5	0.6	4.1
2	0.6	1.0
2.5	0.6	1.2
3	0.6	3.2

20 m	T-P	C-P
0	0.4	19.8
0.5	1.2	19.0
1	0.4	20.3
1.5	0.4	21.1
2	0.5	24.6
2.5	0.6	22.7
3.5	0.6	13.9
4.5	0.7	14.9

30 m	T-P	C-P
0	0.7	5.8
0.5	0.5	5.4
1	0.7	5.2
1.5	0.6	5.8
2	0.6	5.9
2.5	0.5	5.7
3	0.6	9.8
4	0.5	9.7

50 m	T-P	C-P
0	0.3	6.3
0.5	0.4	35.6
1	0.4	31.2
1.5	0.4	37.9
2	0.4	32.1
2.5	0.5	33.2
3	0.5	33.2
3.5	0.5	31.9
4	0.6	30.8

60 m	T-P	C-P
0	0.1	44.1
0.5	0.1	5.5
1	0.1	6.3
1.5	0.2	9.1
2	0.3	3.7
2.5	0.4	9.5
3	0.5	9.5

70 m	T-P	C-P
0	1.0	4.9
0.5	0.9	4.9
1	0.7	4.0
1.5	0.7	4.0
2	6	3.9

80 m	T-P	C-P
0	0.9	4.3
0.5	0.8	4.6
1	0.7	3.4
1.5	0.7	3.4
2	0.9	4.3

Supplementary Information 3. Errors (%) of the SSA and SMI at each strain are corresponded in the Figure 6 for depths of 10-80 m.

10 m	SSA	SMI
0	1.1	3.3
0.5	1.2	5.1
1	1.0	2.6
1.5	1.0	3.5
2	1.0	3.9
2.5	1.1	4.4
3	1.0	4.1

20 m	SSA	SMI
0	0.6	33.3
0.5	1.4	281.3
1	0.7	40.4
1.5	0.7	40.9
2	0.7	33.7
2.5	0.7	39.9
3.5	0.7	56.9
4.5	0.7	106.3

30 m	SSA	SMI
0	1.3	6.3
0.5	1.2	5.6
1	1.3	5.4
1.5	1.2	4.9
2	1.3	5.2
2.5	1.2	4.5
3	1.3	5.1
4	1.1	4.7

50 m	SSA	SMI
0	0.6	3.0
0.5	0.7	3.0
1	1.0	3.6
1.5	1.0	3.7
2	1.0	3.5
2.5	1.0	3.7
3	1.0	3.8
3.5	1.0	3.5
4	1.1	3.6

60 m	SSA	SMI
0	1.3	5.7
0.5	1.4	5.1
1	1.2	4.9
1.5	1.4	5.1
2	1.4	5.1
2.5	1.5	5.1
3	1.5	5.1

70 m	SSA	SMI
0	1.5	3.3
0.5	1.4	3.6
1	1.4	4.0
1.5	1.5	4.3
2	1.5	4.8

80 m	SSA	SMI
0	1.7	6.9
0.5	1.6	6.8
1	1.6	6.9
1.5	1.6	6.8
2	1.7	6.7