

Report from the SMHI monitoring cruise with R/V Svea



Foto: Ola Kalén,
SMHI

Survey period: 2020-12-03 - 2020-12-04

Principal: Swedish Meteorological and Hydrological Institute (SMHI),
Swedish Agency for Marine and Water Management (SwAM)

Cooperation partners: Swedish University of Agricultural Sciences (SLU)

SUMMARY

During the expedition, which is part of the Swedish national marine monitoring programme, the Skagerrak, the Kattegat, the Sound, the Baltic Proper and the Gulf of Bothnia was visited. The weather was overcast with moderate to fresh southerly winds in the Gulf of Bothnia and moderate to light winds in the Baltic Proper, Skagerrak and Kattegat.

The surface water (0–10 m) had cooled down since November. Nonetheless, the temperature was still above normal at all stations in the Baltic Sea, but within the normal range in the Skagerrak and Kattegat. The temperature was 7–8 °C in the Skagerrak and Kattegat, 8–9 °C in the Baltic Proper, about 7 °C in the Åland Sea, 5–6.5 °C in the Bothnian Sea and about 5 °C in the Gulf of Bothnia. The salinity of the surface water in the Baltic Proper was still above normal for the season and varied between 6.9–8.2 psu. In the Kattegat and Skagerrak, the salinity of the surface water was below normal to normal.

The concentrations of inorganic nutrients in the surface water had increased since November and were now close to winter maximums, which is normal for the autumn when phytoplankton activity decreases and the water mass mixes. Concentrations of silicate were higher than normal at most stations in the Baltic Sea and some of the stations on the west coast. Concentrations of phosphate were higher than normal in the Gulf of Bothnia and at a few stations in the Baltic Proper, the Skagerrak and the Kattegat. The concentrations of dissolved inorganic nitrogen (DIN) were below normal in the Bothnian Bay and above normal east of Gotland and in the Bornholm Basin, otherwise mostly normal. In the deep water in the Western Gotland Basin, the concentration of dissolved inorganic nitrogen was far above normal.

There was no oxygen deficiency in Skagerrak's bottom water. However, at the coastal station Släggö, the oxygen concentration had decreased to 2.54 ml/l. The oxygen concentration in the Kattegat's bottom water was slightly higher than in November, 5.0–5.5 ml/l. In the Sound, the oxygen concentration in the bottom water remained at the same level as in November, 3.8 ml/l.

As in November, there was no oxygen deficiency in the Arkona Basin, which is an improvement from October. At all other stations, on the other hand, there was acute oxygen deficiency or completely oxygen free (when hydrogen sulphide forms). In the Bornholm Basin, Hanö Bight and at the station BCS III-10, acute oxygen deficiency (<2 ml / l) was measured from 70 m to the bottom. At station BY15, there was no measurable oxygen in the water from a depth of 85 m and hydrogen sulphide was measured from a depth of 135 m. In the Western Gotland Basin, the depth at which hydrogen sulphide was first measured varied from 60 m at the station BY38 in the southern part of the basin to 125 m at the station BY31 in the northern part of the basin. At all other stations, hydrogen sulphide was measured from 80 m.

No oxygen deficiency was observed in the Gulf of Bothnia, which is normal. However, the oxygen levels in the deep water at some stations, primarily in the southern Bothnian Sea, were slightly lower than usual at this time of year.

The next regular expedition is planned 8-15 January with R/V Svea, then there is also winter mapping of nutrients in the Kattegat.

RESULT

The expedition was carried out on board R/V Svea and started in Kalmar on the 3rd of December and ended in Lysekil on the evening the 14th of December. During the first half of the expedition, the winter mapping of nutrients was carried out in the Gulf of Bothnia and during the second half, regular stations were visited in the Baltic Proper, the Kattegat and the Skagerrak.

The weather during the expedition was overcast, with very few hours of sunshine. In the Gulf of Bothnia, there were mainly southerly winds. The wind decreased slightly during the second half of the expedition in the Baltic Proper and the North Sea, but increased on the last day on the Skagerrak.

In the Gulf of Bothnia, two of the planned stations were not visited, instead the four offshore stations that are part of the environmental monitoring program that is normally carried out by Umeå University were sampled. All planned stations in the Baltic Proper, the Kattegat and the Skagerrak were sampled, i.e. 26 of the planned 26 stations.

Svea's instrument for measuring profiles under way, MVP (Moving Vessel Profiler), was used on several occasions during the expedition and is shown in the attached map of the route. The Å-transect in the Skagerrak, Krieger's Flak in the Arkona basin, across Stolpe channel, east of Gotland BY15-BY10 and west of Gotland BY38-BY32.

During the expedition, deployment of a bottom system for measuring salinity, temperature and oxygen concentration was carried out at Understen on the border between the Åland Sea and the Bothnian Sea. Also, the bottom system in Laholmsbukten (station L9) was replaced. The bottom systems are included in the environmental monitoring programme from the autumn of 2019.

The buoy at Huvudskär was also recovered during the second part of the expedition and brought home for service. At Flinten 7, a reference measurement was made with CTD for comparison with the fixed system that is there in collaboration with the Swedish Maritime Administration.

This report is based on data that has undergone an initial quality control. When further quality control has been performed, certain values may change. Data from this expedition is published as soon as possible on the data host's website, normally this takes place within one week after the expedition has ended. Some analyzes are made after the expedition and are published later.

The stations BY31 Landsortsdjupet and BY29 are monitored by SMHI November-February and by Stockholm university the rest of the months. The seasonal plots and the vertical profiles for these two stations also include data from Stockholm university. These data are however also only initially quality controlled and will be available at the data host during 2021.

Data can be downloaded from SHARKweb here:

<https://www.smhi.se/klimatdata/oceanografi/havsmiljodata>

Skagerrak

The surface water (0–10 m) had cooled down by about 4 degrees since the measurements in November and varied between 7–8 degrees in December, which is within the normal range. As in November, it was warmest in the far west of the Å-transect (8 degrees) and coldest closest to the coast (just below 7 degrees). The salinity was below normal at the southernmost station P2 and at the westernmost station Å17 and varied from 23.6 psu at station P2 to 27.1 psu at station Å17. At all other stations the salinity was normal. At the stations along the Å-transect, a thermocline and a halocline coincided around 15 m, except at the station Å13 where the pycnocline was found at a depth of 25 m. Under the well-mixed surface layer, the temperature increased down to 60 m, where there was a second thermocline and the temperature decreased again. In the deep water the temperature was around 8 °C and the salinity 35 psu. At the Släggö station located just beside the coast, there was a sharp halocline at 30 m where the temperature increased to 12 degrees and then decreased again towards the bottom.

The concentration of nutrients in the surface water had increased markedly since November at all stations in the Skagerrak and was now approaching annual maximums that are normally measured during December or January. The concentration of phosphate in the surface water varied between 0.5–0.6 µmol/l, the variation of dissolved inorganic nitrogen (DIN) was 4–7 µmol/l and for silicate the variation was between 9–11 µmol/l. In the open sea, the concentrations of phosphate and silicate were higher than normal at all stations, while there were normal concentrations at the Släggö station. The concentrations of DIN were above normal only at the outermost stations Å17 and Å15. In the deep water, concentrations were mostly normal. At station Å17, the concentrations of all nutrients were slightly below normal between 75–150 m depth and at station Släggö, all nutrients were higher than normal in the bottom water, which coincided with low oxygen concentrations at that station. In the bottom water at Släggö, oxygen deficiency was measured, just as in November, the oxygen concentration at the time of measurement was 2.54 ml/l.

There was no clear peak in chlorophyll fluorescence at any station.

Kattegat and the Sound

The temperature in the surface water (0–10 m) had dropped by about four degrees since November and was now around 7 °C at all stations in the Kattegat and the Sound, which is normal for the season. The salinity in the surface water was below normal in the Sound (approx. 9 psu) and at the station Anholt E (approx. 18 psu) in the southern Kattegat, at all other stations the salinity was normal for the month (21–22 psu). In the Sound there was a sharp halocline at a depth of 10 m, with well mixed colder and fresher water from the Baltic Sea (6.7 degrees, 8.7 psu) above warmer and saltier water from the Skagerrak below 10 m (12 degrees, 32 psu). At the stations Anholt E and N14 Falkenberg, the surface water was well mixed down to about 5 m, below this there was another halocline where temperature and salinity increased. At the station Fladen there was a sharp halocline at a depth of 20 m. The temperature was slightly higher than normal in the deep water and the salinity was normal.

The nutrient concentrations had increased markedly at all stations in the Kattegat since the survey in November. In the Sound, on the other hand, the concentration of silicate remained at the same level

as in November, while the concentrations of phosphate and DIN had increased slightly. The concentration of DIN was around 4 $\mu\text{mol/l}$ at all stations, i.e. significantly higher than in November when the levels were still close to the reporting limit at stations Anholt E and N14 Falkenberg. The concentration of phosphate varied between 0.5–0.7 $\mu\text{mol/l}$, highest in the Sound. The phosphate concentration was above normal at station Anholt E, otherwise normal. The concentration of silicate was above normal in the Sound (14.6 $\mu\text{mol/l}$) and at the station Anholt E (10.8 $\mu\text{mol/l}$) and normal at all other stations (8–9 $\mu\text{mol/l}$). In the deep water, no general pattern was observed, but the nutrient concentrations varied between being slightly below normal to slightly above normal.

The oxygen concentration in the bottom water in the Kattegat had increased slightly since November, to 5.0–5.5 ml/l. In the Sound, the oxygen concentration in the bottom water remained at 3.8 ml/l, which means deficiency of oxygen. In the Sound, there was a deficiency of oxygen from 15 m to the bottom with concentrations just below 4 ml/l.

Measurements of chlorophyll fluorescence showed higher biological activity than in the Skagerrak, but at low levels and no clear peak in the measurements occurred in the Kattegat.

Baltic Proper

The temperature in the surface water was above normal at all but one of the stations in the Baltic Proper. The station, BY10, which was within the normal range had a deviating low temperature (7.1 degrees) compared with other stations (7.6–9.0 degrees). The average temperature in the surface water at the stations in the Baltic Proper during the month of December for the period 2001–2015 varies between 6.2–6.8 degrees, thus the temperature at the measurements in December were 1–2 degrees above the 15-year mean. The salinity of the surface water varied between 6.9 psu in the Western Gotland basin and 8.3 psu in the Arkona basin. In the Arkona basin the salinity was normal, in all other basins it was above normal. At the stations in the Eastern Gotland basin and the Northern Baltic Proper (stations BY29 and Huvudskär) the water was well mixed down to about 60 m where a thermocline and a halocline coincided. The temperature fell to about 5.5–6.0 degrees below this pycnocline and then increased slightly again in the deep water. In the Western Gotland basin, the depth of the well-mixed surface layer varied, at the stations BY31 and BY32 the pycnocline was at about 45 m, then at about 30 m further south at the station BY38. Here, too, the temperature dropped to about 5.5–6.0 degrees below the pycnocline and then increased towards the bottom. In the southern parts, the surface water was well mixed to 30 m in Arkona and 35 m in the Bornholm Basin. In these basins, the temperature below the halocline increased to 10–12 degrees. At the station Ref M1V1 in Kalmar sound, where the bottom depth is only 20 m, there was no stratification. In the deep water, salinity and temperature were above normal in the Eastern and Western and Gotland basins and the Northern Baltic Proper.

The concentrations of phosphate in the surface water were normal at all but three stations (BCS III-10, BY10 and Ref M1V1) and had increased at all stations since November, the concentration now varied between 0.45–0.84 $\mu\text{mol/l}$. The concentrations of DIN had increased more than the concentrations of phosphate and the concentration of phosphate was above normal at most stations and varied between 1.6 $\mu\text{mol/l}$ at station BY1 in Arkona to 4.35 $\mu\text{mol/l}$ at station BY29 in the Northern Baltic Proper. Since November, the concentration of silicate had decreased in Arkona,

remained unchanged in Bornholm and increased in the remaining basins. The levels of silicate were above normal except in Arkona and varied between 11–17 $\mu\text{mol/l}$ with the highest concentrations in the Bornholm Basin and the southern parts of the East Gotland Basin. Below the halocline, nutrient concentrations were generally normal. However, the levels of DIN were clearly above normal at stations BY15, BY29, BY32 and BY38.

Just like in November, there was no oxygen deficiency in the Arkona Basin or at the shallow coastal station Ref M1V1. At other stations, on the other hand, there was acute oxygen deficiency or completely oxygen-free. In the Bornholm Basin, Hanö Bight and at the station BCS III-10, acute oxygen deficiency ($<2 \text{ ml/l}$) was measured from 70 m to the bottom. The shallowest measurement of acute oxygen deficiency was made at the station BY39 where the oxygen concentration at 50 m (1 m above the bottom) was 1.05 ml/l . At the station BY15, there was no measurable concentrations of oxygen from a depth of 85 m and hydrogen sulphide was measured from a depth of 135 m. In the Western Gotland Basin, the depth at which hydrogen sulphide was first measured varied from 60 m at the station BY38 in the southern part of the basin to 125 m at the station BY31 in the northern part of the basin. At all other stations, hydrogen sulphide was measured from 80 m.

Measurements of chlorophyll fluorescence showed low biological activity at all stations except in the Arkona Basin where it was slightly higher and at a similar level as in the Kattegat.

The Gulf of Bothnia

The temperature in the entire water column was for the most part higher than normal for December in the entire Gulf of Bothnia. Only in the southwestern part of the Bothnian Sea and at the station furthest to the north in the Bothnian Bay somewhat lower temperatures were observed, which still were slightly above normal. The temperature in the surface water was around 7 °C in the Sea of Åland, between 5 to 6.5 °C in the Bothnian Sea. Coldest in the southwest and warmest in the northeast, probably due to the southern to southwesterly wind that transported the warmer surface waters northeast. In the Bothnian Bay the temperature was around 5 °C with the exception of the northernmost station, F3 / A5, where the temperature was 4 °C. Only small variations in temperature were measured deeper down in the water mass.

The salinity was overall on normal levels in the surface waters, just a few stations with somewhat higher than normal values were found in the Bothnian Sea and a couple with slightly lower values in the Bothnian Bay. In the Sea of Åland the salinity was just under 6 psu, in the Bothnian Sea 5.2–5.7 psu and in the Bothnian Bay at around 4 psu or just below. A weak stratification was observed in the Sea of Åland at around 60–70 meters, in the Bothnian Sea around 40–60 meters except for in the north at F18 Sydostbrotten where the stratification was between 10 and 15 meters. In the Bothnian Bay a weak stratification was found at 60 meters except at RR1 where it was a just over 80 meters and at F3 / A5 where there was a weak stratification at 10 meters.

The concentrations of dissolved inorganic nitrogen (DIN) were in the surface waters in the Sea of Åland just over 3 $\mu\text{mol/l}$ and between 2.2–3.5 $\mu\text{mol/l}$ in the Bothnian Sea, which is at normal levels. In the Bothnian Bay somewhat lower concentrations than normal were measured; just over 4–5 $\mu\text{mol/l}$. Higher values were observed deeper down below the deepest stratifications, which is normal. The concentration of dissolved inorganic phosphate (DIP) in the surface water was higher

than normal in the entire investigated area, however not as high as in December the year before. In the Sea of Åland around 0.5 $\mu\text{mol/l}$, in the Bothnian Sea between 0.4–0.5 $\mu\text{mol/l}$ and in the Bothnian Bay around 0.1 $\mu\text{mol/l}$. Higher values were observed below the stratification, in particular at the deepest stations in the Bothnian Sea where also the concentrations in the deeper parts were higher than normal. Silicate concentrations were higher than normal both in the Sea of Åland and in the Bothnian Sea with values at just over 20 $\mu\text{mol/l}$ and between 20–30 $\mu\text{mol/l}$ respectively. In the Bothnian Bay the values were normal; 35 $\mu\text{mol/l}$, somewhat higher in the northeast with values up to 40 $\mu\text{mol/l}$.

No oxygen deficiency was observed in the Gulf of Bothnia, which is normal. However, the oxygen levels in the deep water at some stations, primarily in the southern Bothnian Sea, were slightly lower than usual at this time of year.

The plankton activity, assessed on the basis of chlorophyll fluorescence from the CTD, was low throughout the area of study.

Measurements of turbidity with the CTD showed very high particle concentrations in the deeper waters at several stations. This could also be observed on the live streamed video from a camera that was mounted on the CTD rosette. High turbidity is normal in the Gulf of Bothnia.

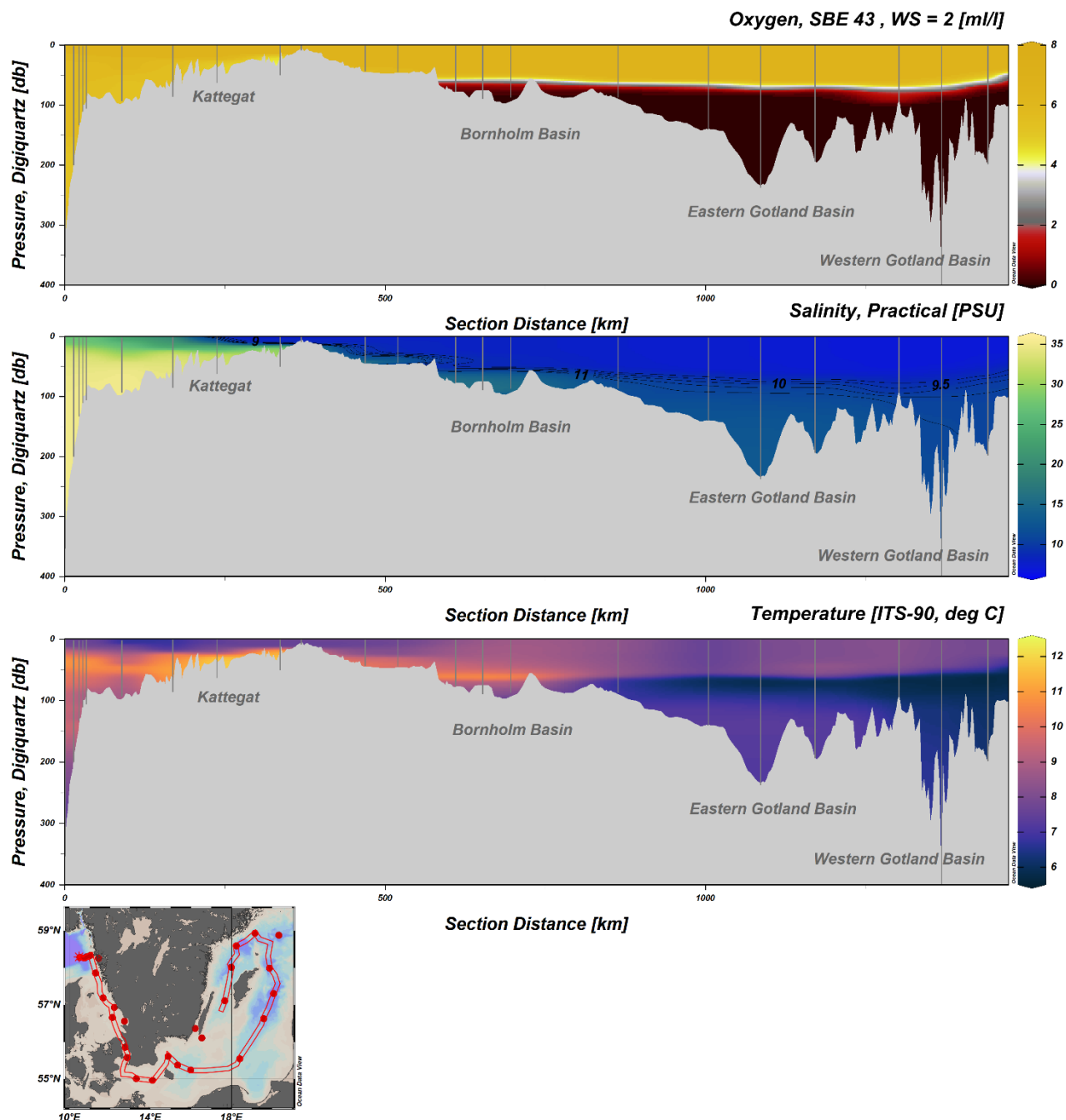


Figure 1. Transect showing dissolved oxygen, salinity and temperature from the Skagerrak, through the Sound and the Eastern Gotland Basin to the Western Gotland Basin.

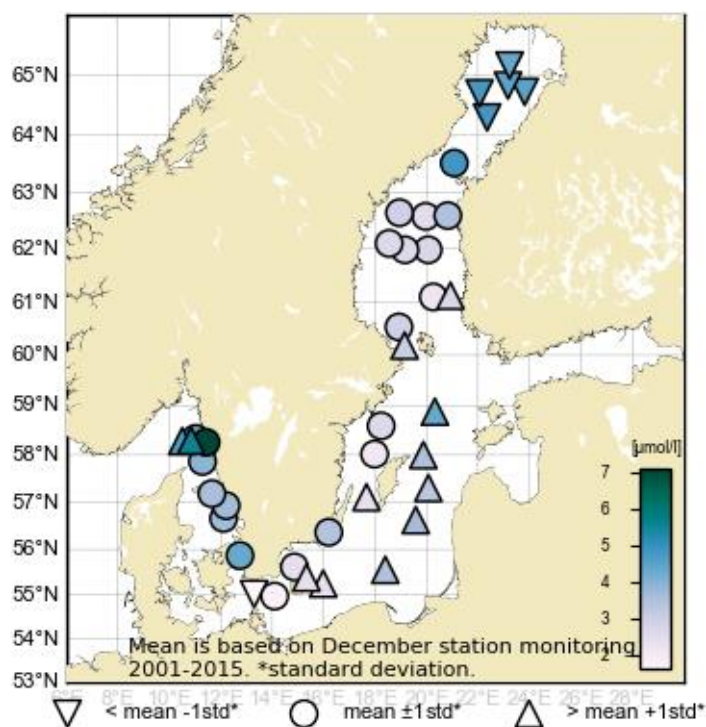


Figure 2. Dissolved inorganic nitrogen concentration in the surface water (0-10 m).

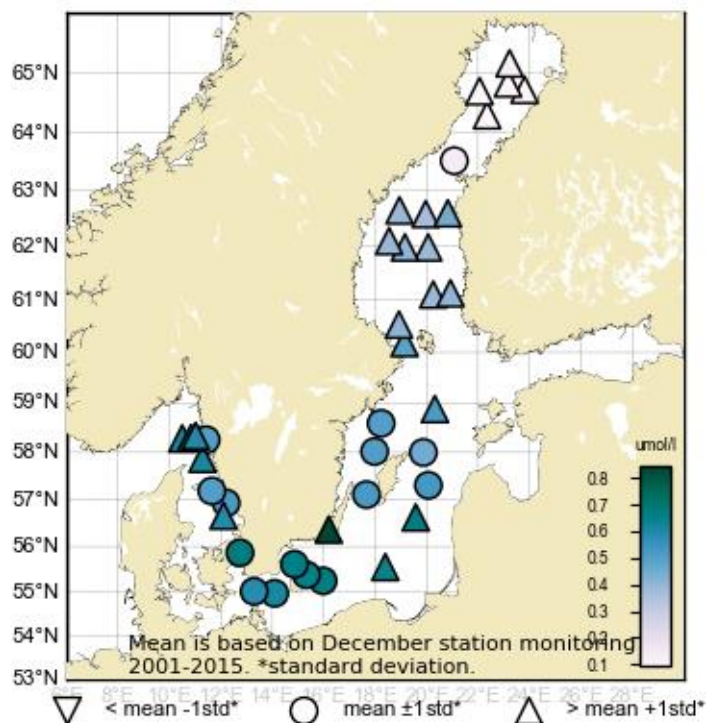


Figure 3. Phosphate concentration in the surface water (0-10 m).

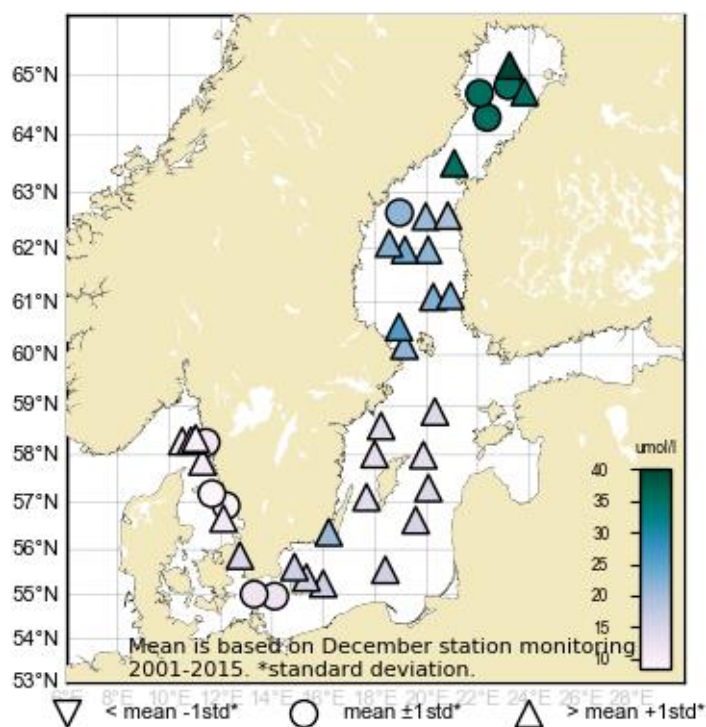


Figure 4. Silicate concentration in the surface water (0-10 m).

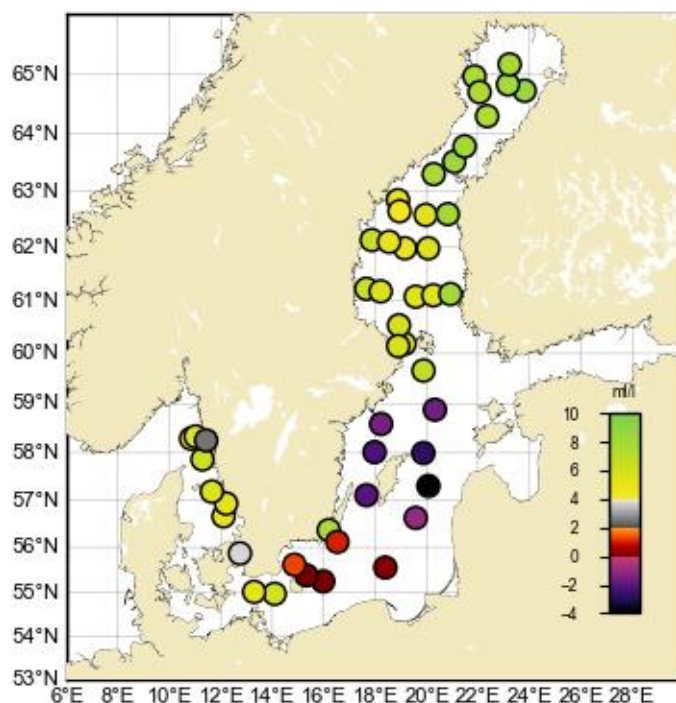


Figure 5. Oxygen concentration in the bottom water, approx. 1 m above bottom. Hydrogen sulphide as negative oxygen.

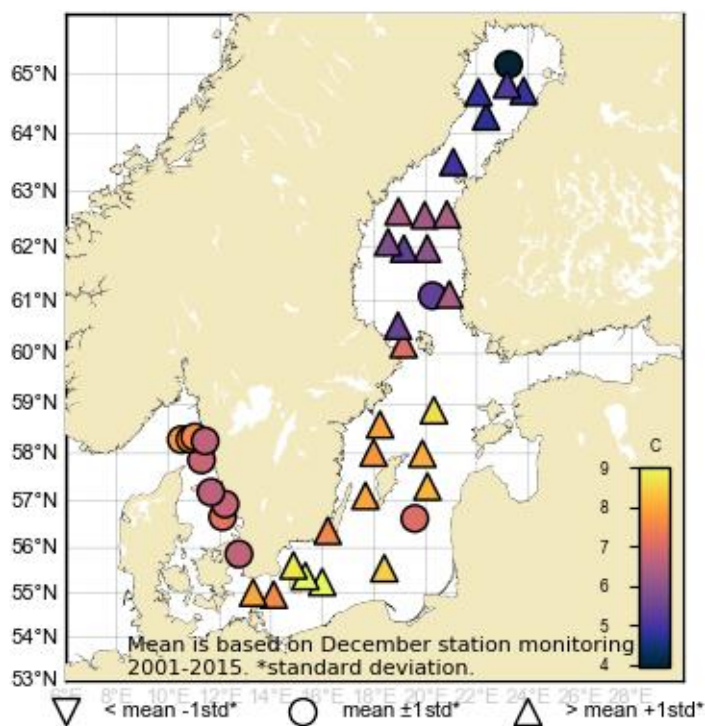


Figure 6. Temperature in the surface water (0-10 m)

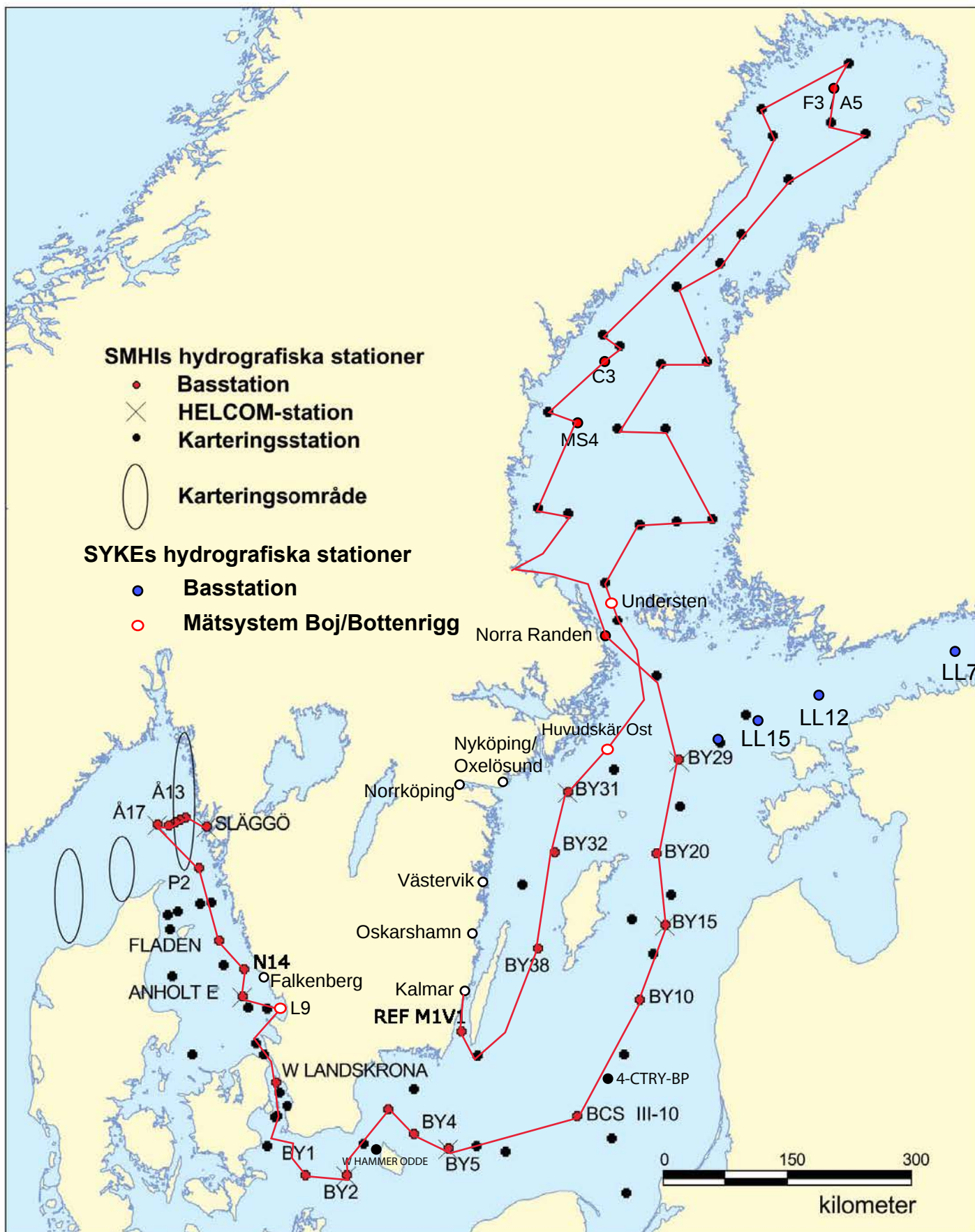
PARTICIPANTS

Name	Leg	Role	Institute
Örjan Bäck	Kalmar-Gävle	Chief scientist leg 1	SMHI
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APPENDICES

- Track chart
- Table over stations, sampled parameters and number of sampling depths
- Vertical profiles for regular monitoring stations
- Monthly average surface water plots for regular monitoring stations

TRACKCHART	
Country:	Sweden
Ship:	R/V Svea
Date:	December
Series:	



Time: 13:11

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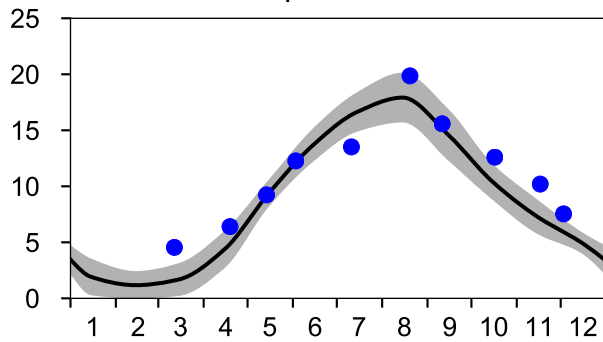
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Ser no	Cru no	Stat code	Proj	Stat name	Lat	Lon	Start date yyyymmdd	Start time hhmm	Bottom depth m	Secchi depth m	Wind dir vel	Air temp C	Air pres hPa	WCWI elac ao	CZPP hoyp loy apt	No de btl	T e m m p p t t s a l l o o d h P P N N N A N A S H C C
0777	23	BPEX26	BAS... BY20	FÅRÖDJ	5759.87	01952.74	20201211	0025	196		12 7	1.9 1012	9990 x---	17	x x - x - x x x x - x x x x - - x - - -		
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0779	23	BPEX13	BAS... BY10		5638.02	01935.07	20201211	1220	144		14 9	3.8 1007	2840 x--x	15	x x x x x x x x x x - x x x x - - x - - -		
0780	23	BPSE11	BAS... BCS III-10		5533.32	01824.00	20201211	2040	91		13 8	5.0 1006	9990 x---	12	x x x x - x x x x - x x x x - - x - - -		
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0782	23	BPSB06	BAS... BY4	CHRISTIANSÖ	5523.01	01520.03	20201212	1130	92	10	13 6	4.8 1004	2830 x---	12	x x x x - x x x x - x x x x - - x - - -		
0783	23	BPSH05	BAS... HANÖBUKTEN		5537.04	01452.03	20201212	1410	79		13 6	5.4 1004	2830 x---	11	x x x x - x x - x - x x x x - - x - - -		
0784	23	BPSA03	BAS... BY2	ARKONA	5458.27	01405.92	20201212	1950	46		12 5	5.4 1005	9990 xxx-	8	x x x x - x x - x - x x x x - - x - - -		
0785	23	BPSA02	BAS... BY1		5500.93	01318.04	20201212	2350	46		13 5	5.1 1006	9990 x---	8	x x x x - x x - x - x x x x - - x - - -		
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0787	23	SOXC39	BAS... W LANDSKRONA		5552.00	01244.90	20201213	0750	53		04 3	5.1 1018	2820 x---	9	x x x x - x x - x - x x x x - - x - - -		
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0789	23	KAEX29	BAS... ANHOLT E		5640.13	01206.69	20201213	1630	63		11 6	5.5 1010	9990 xx--	10	x x x x x x x - x - x x x x - - x - - -		
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0796	23	SKEX15	BAS... Å14		5818.92	01056.52	20201214	1200	111		13 11	5.2 1006	2850 ----	11	- x - x - - x - - - - - - - - - -		
0797	23	SKEX14	BAS... Å13		5820.37	01101.66	20201214	1310	107		12 10	5.1 1005	2850 x---	10	x x x x - x x - x - x x x x - - x - - -		
0798	23	FIBG27	BAS... SLÄGGÖ		5815.58	01126.09	20201214	1600	78		12 9	4.8 1004	6990 xxx-	9	x x x x - x x - x - x x x x - - x - x x		

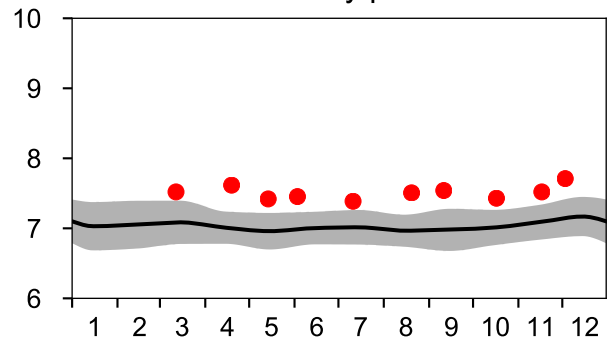
STATION REF M1V1 SURFACE WATER (0-10 m)

Annual Cycles

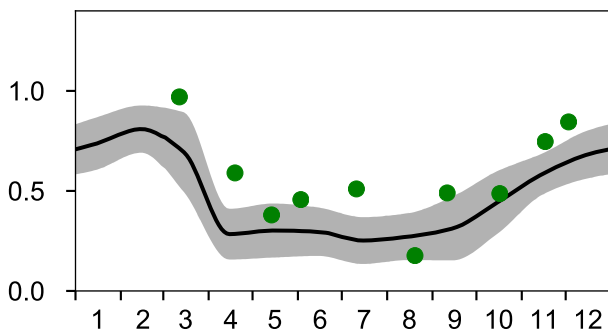
— Mean 2001-2015
Temperature °C



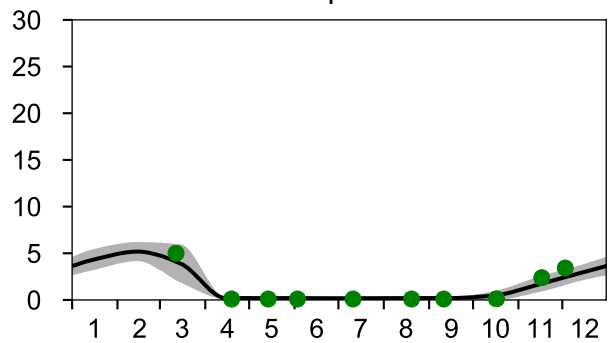
St.Dev. Salinity psu



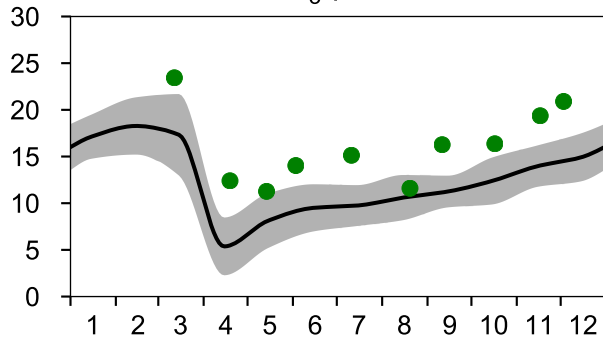
PO₄ µmol/l



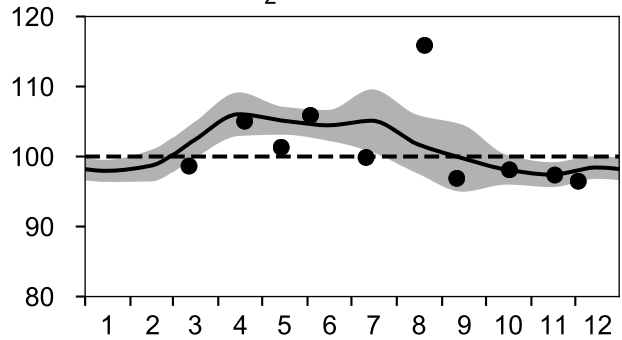
DIN µmol/l



SiO₃ µmol/l

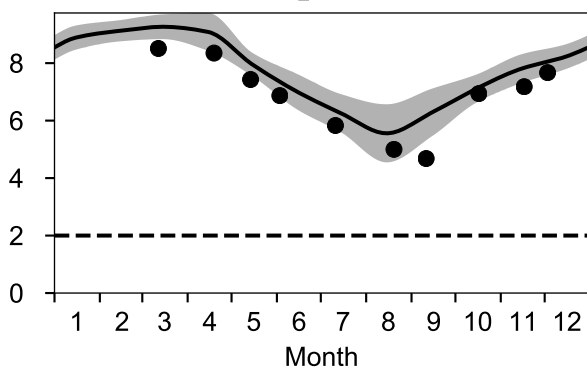


O₂ saturation %

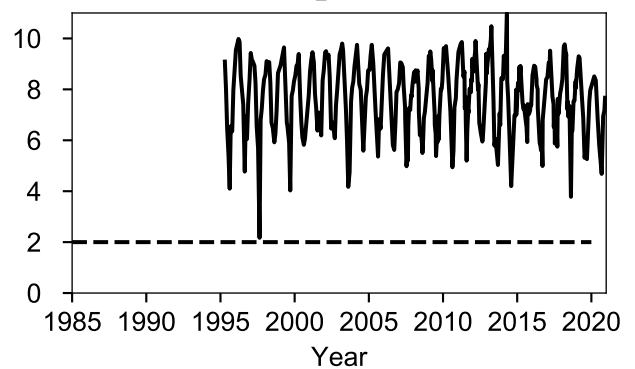


OXYGEN IN BOTTOM WATER (depth >= 15 m)

O₂ ml/l

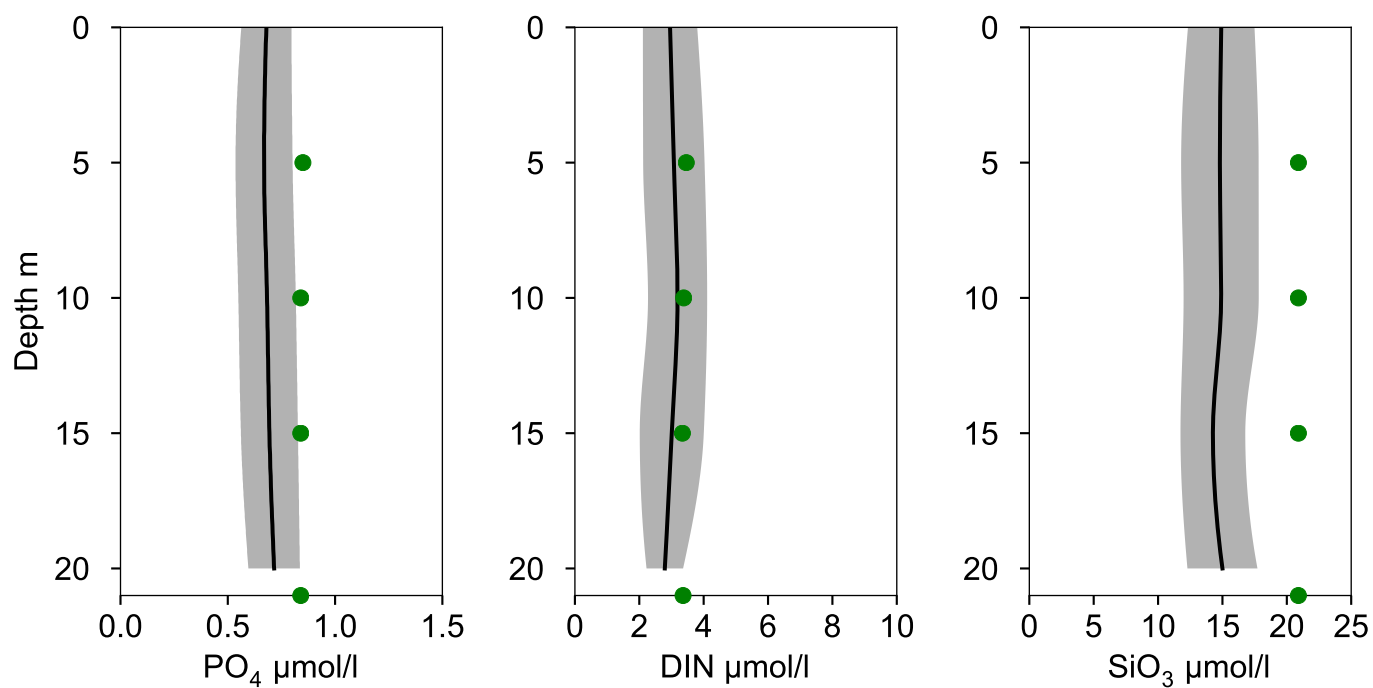
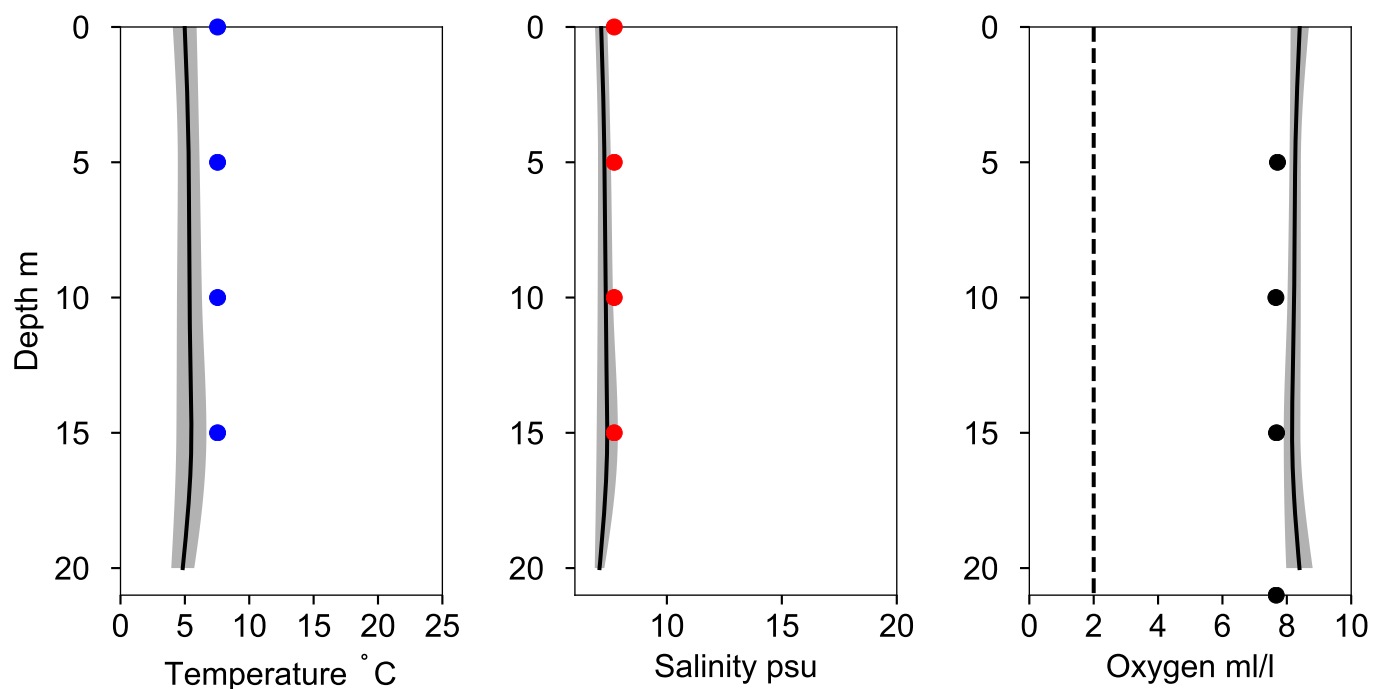


O₂ ml/l



Vertical profiles REF M1V1 December

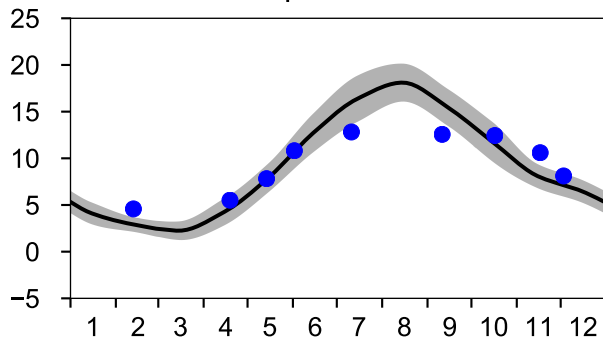
— Mean 2001-2015 St.Dev. • 2020-12-03



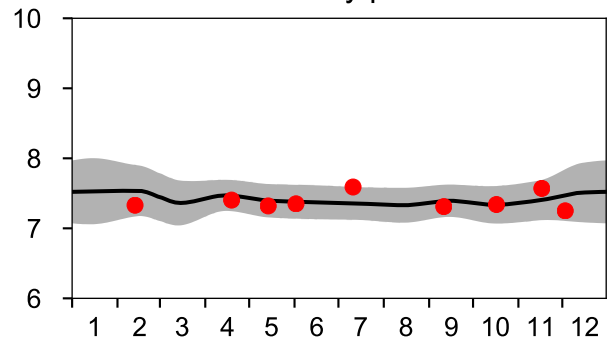
STATION BY39 ÖLANDS S UDDE SURFACE WATER (0-10 m)

Annual Cycles

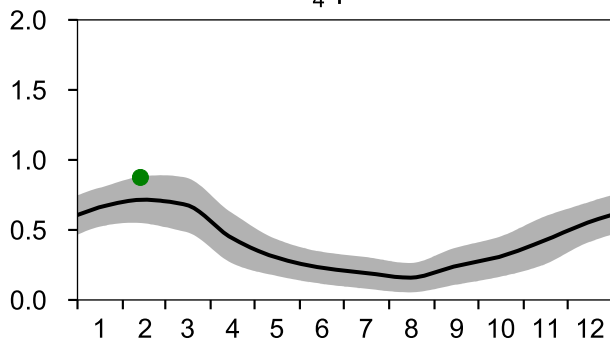
— Mean 2001-2015
Temperature °C



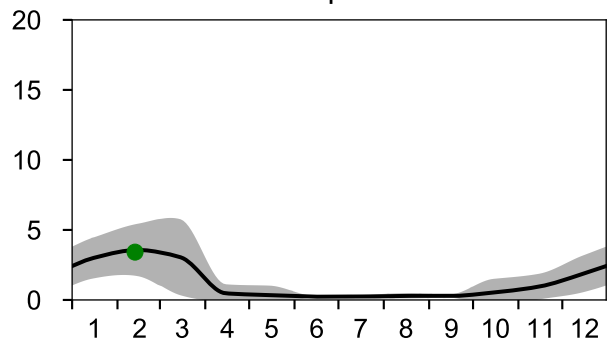
— St.Dev. • 2020
Salinity psu



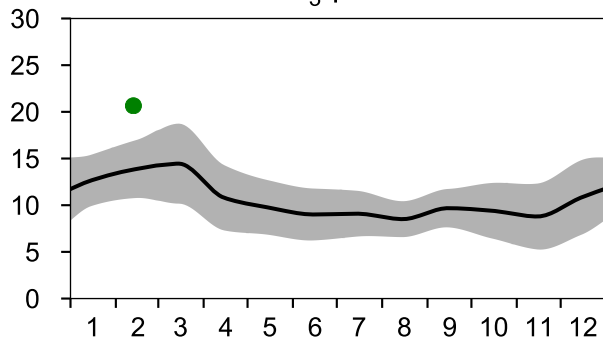
PO₄ µmol/l



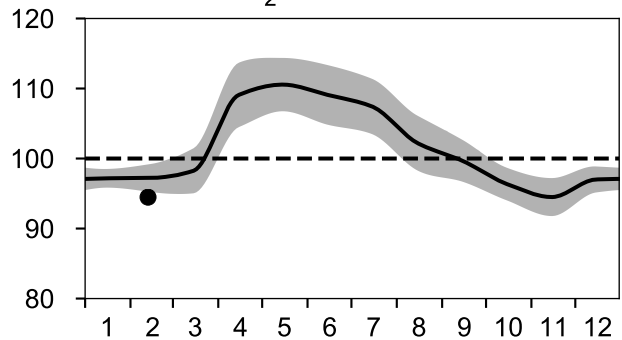
DIN µmol/l



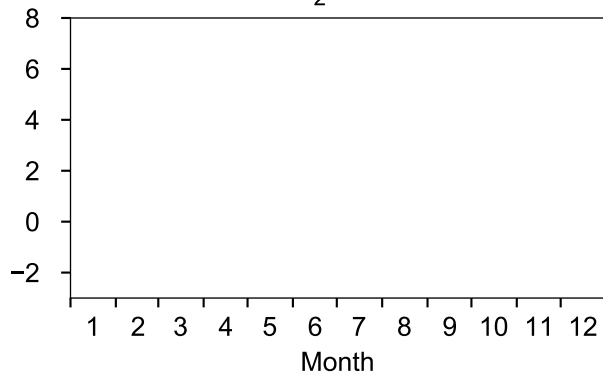
SiO₃ µmol/l



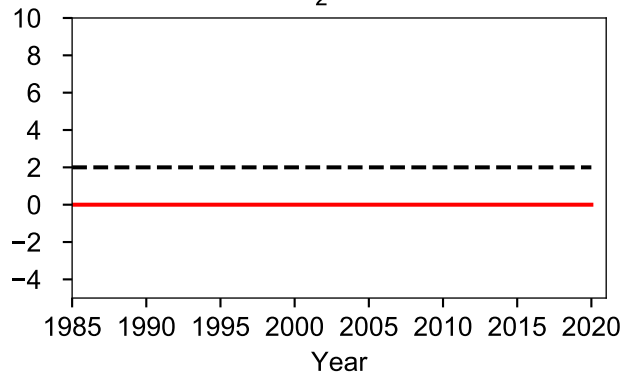
O₂ saturation %



O₂ ml/l

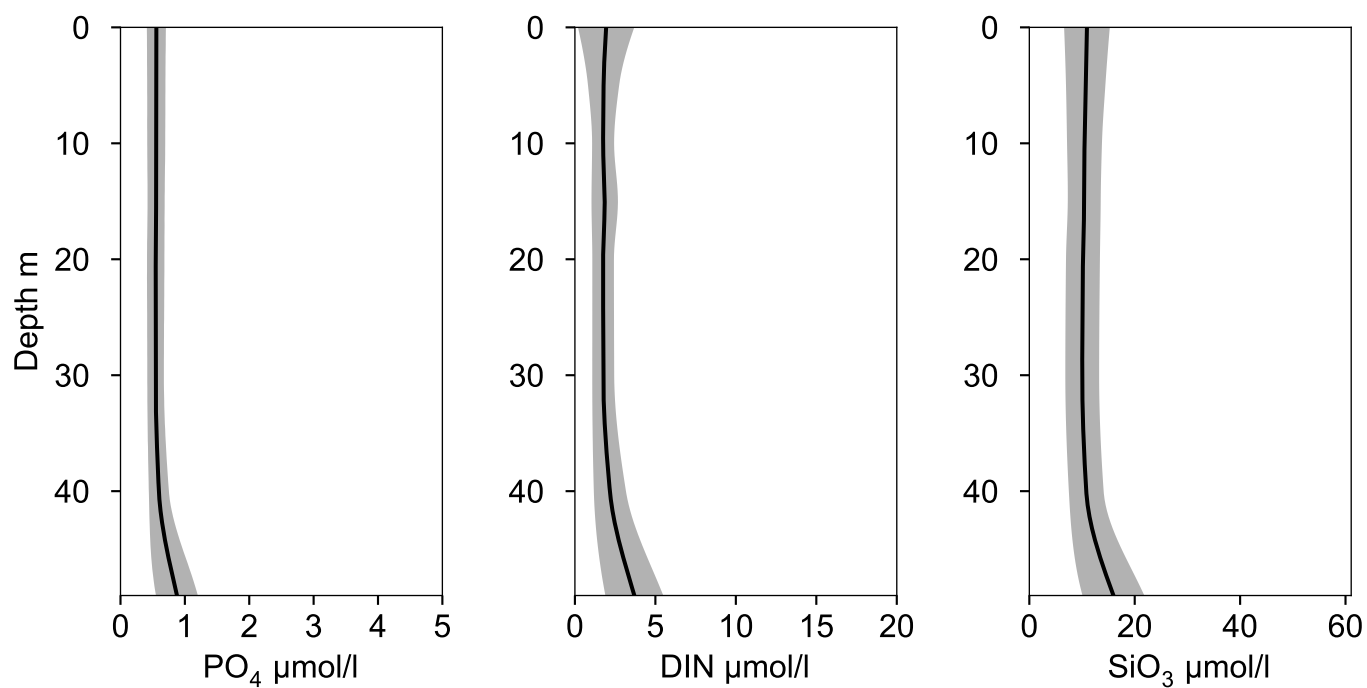
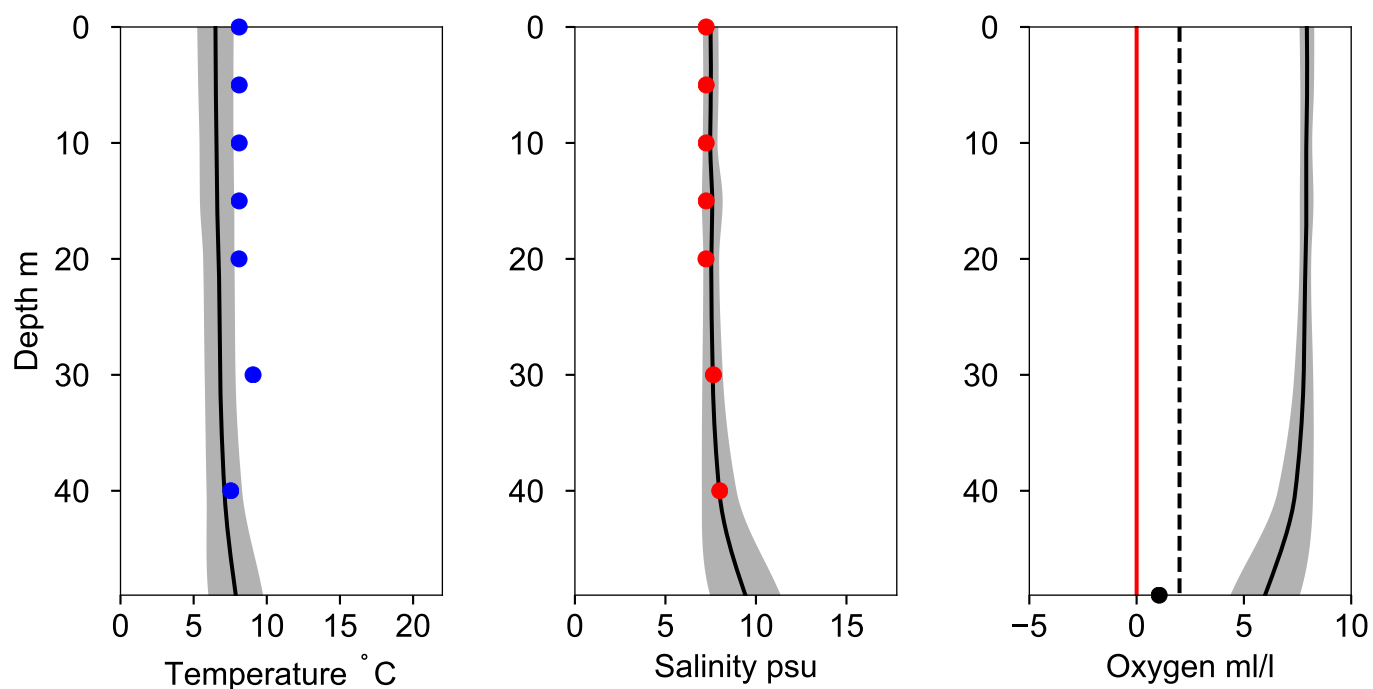


O₂ ml/l



Vertical profiles BY39 ÖLANDS S UDDE December

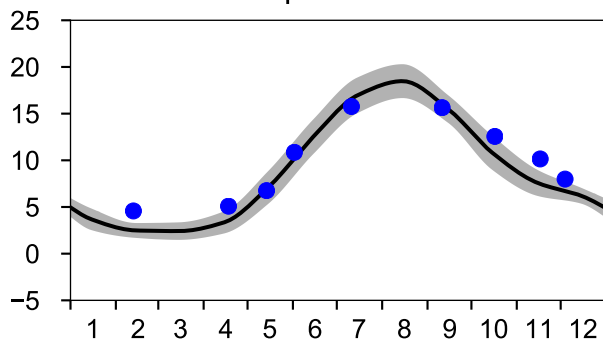
— Mean 2001-2015 St.Dev. • 2020-12-03



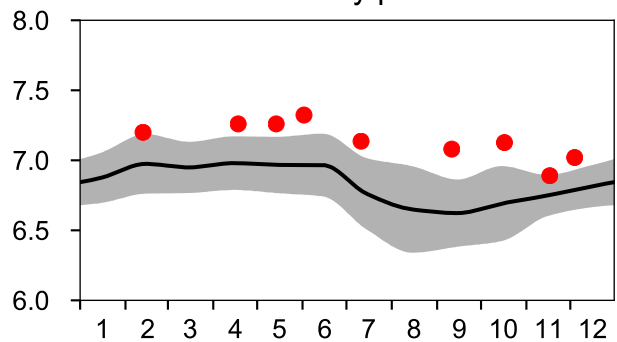
STATION BY38 KARLSÖDJ SURFACE WATER (0-10 m)

Annual Cycles

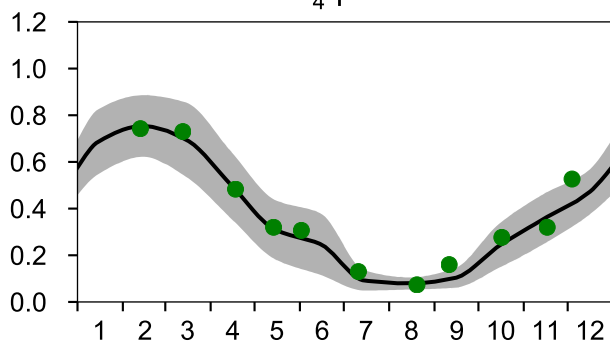
— Mean 2001-2015
Temperature °C



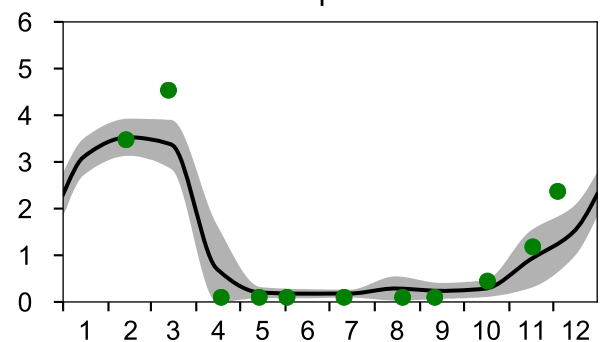
— St.Dev. ● 2020
Salinity psu



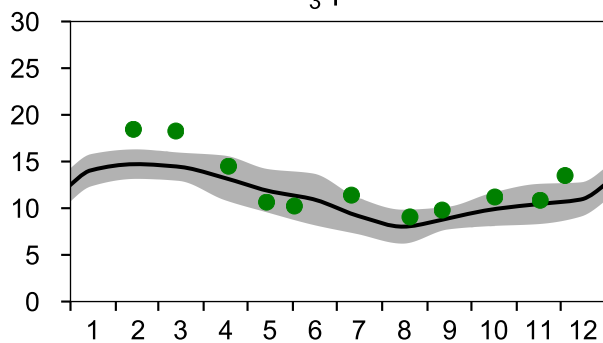
PO₄ µmol/l



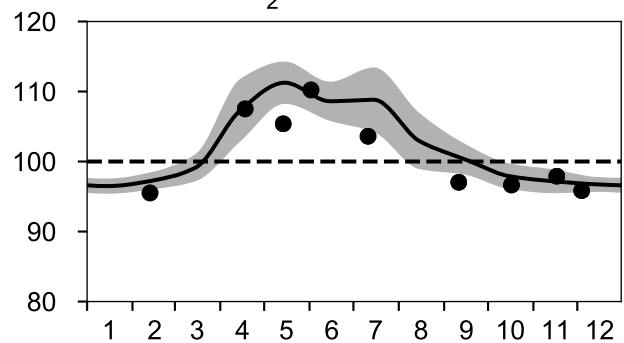
DIN µmol/l



SiO₃ µmol/l

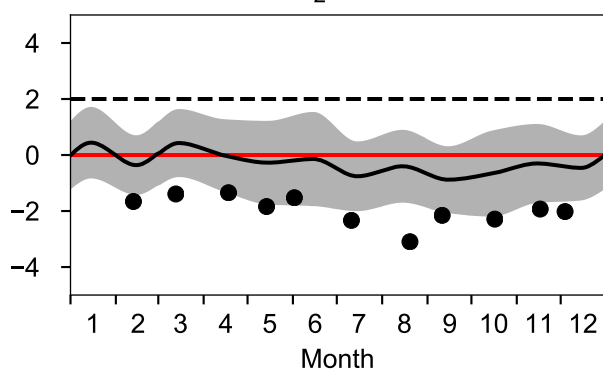


O₂ saturation %

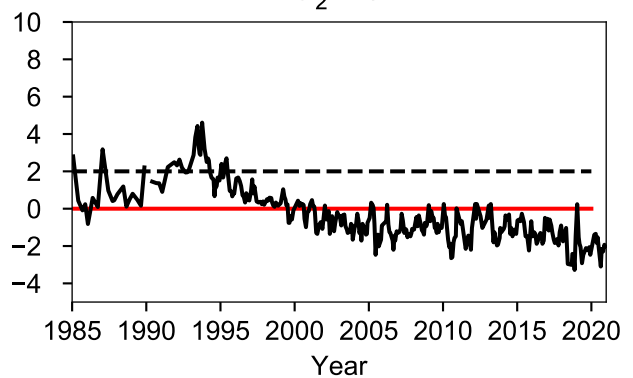


OXYGEN IN BOTTOM WATER (depth >= 100 m)

O₂ ml/l

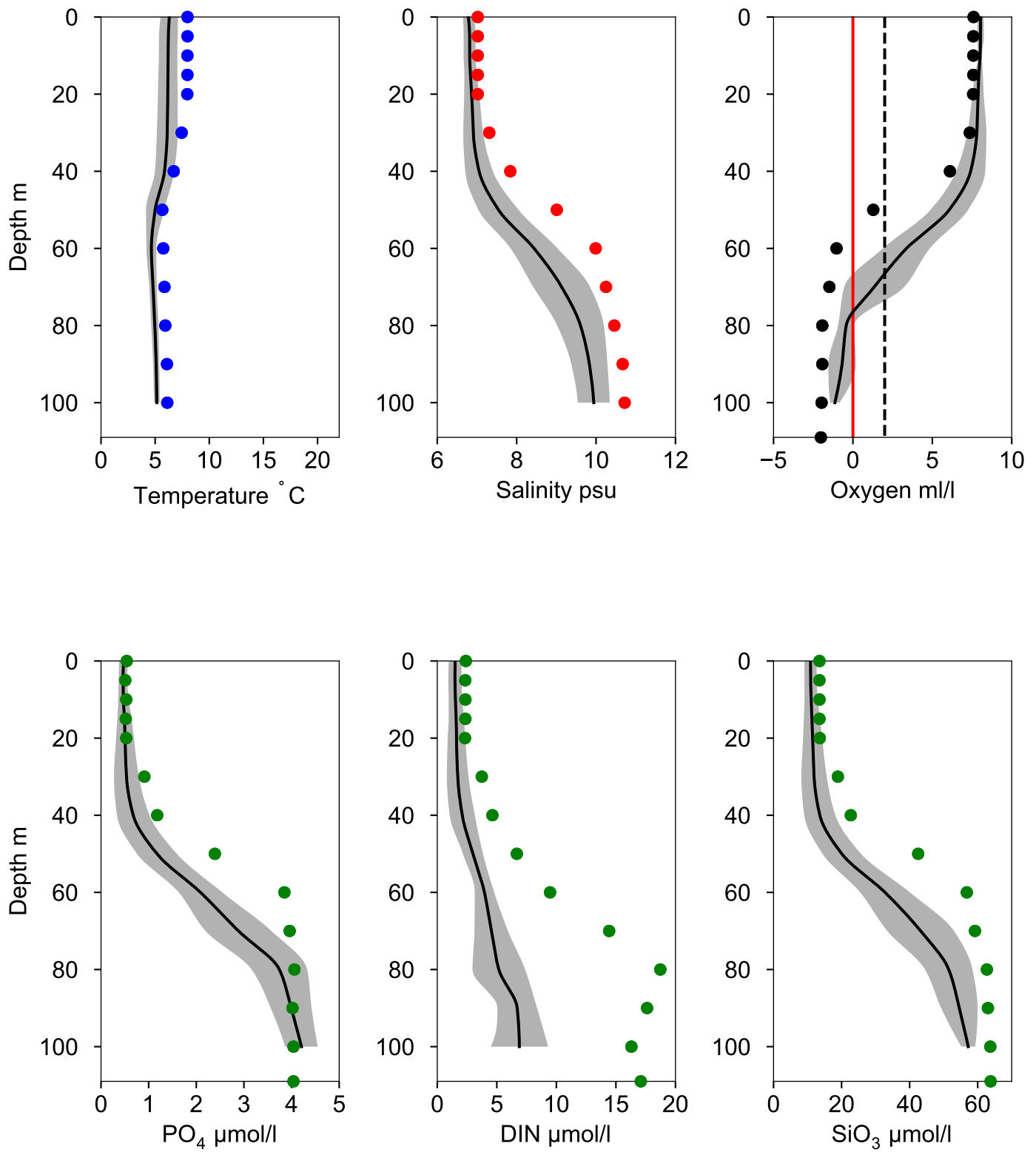


O₂ ml/l



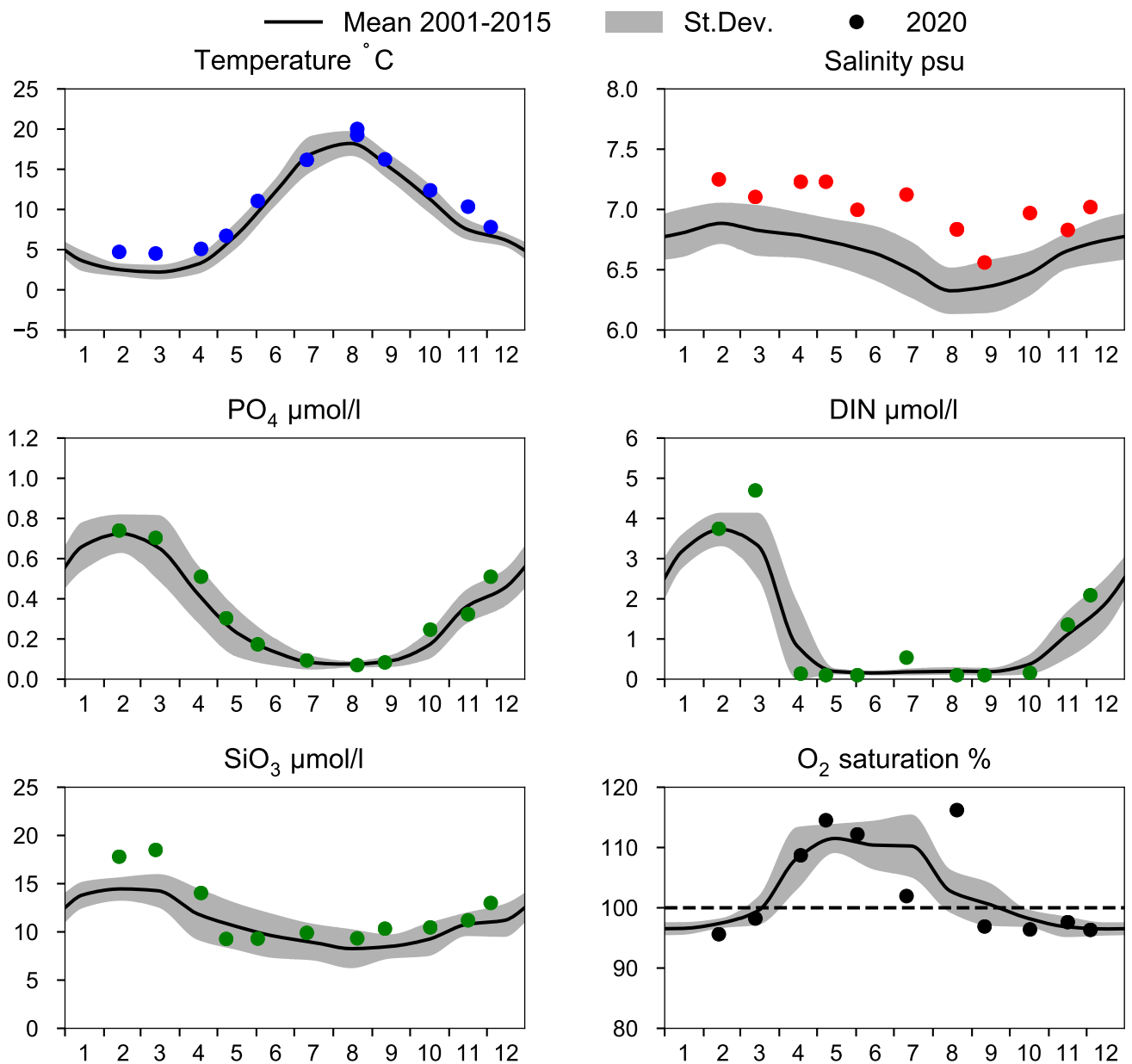
Vertical profiles BY38 KARLSÖDJ December

— Mean 2001-2015 St.Dev. • 2020-12-04

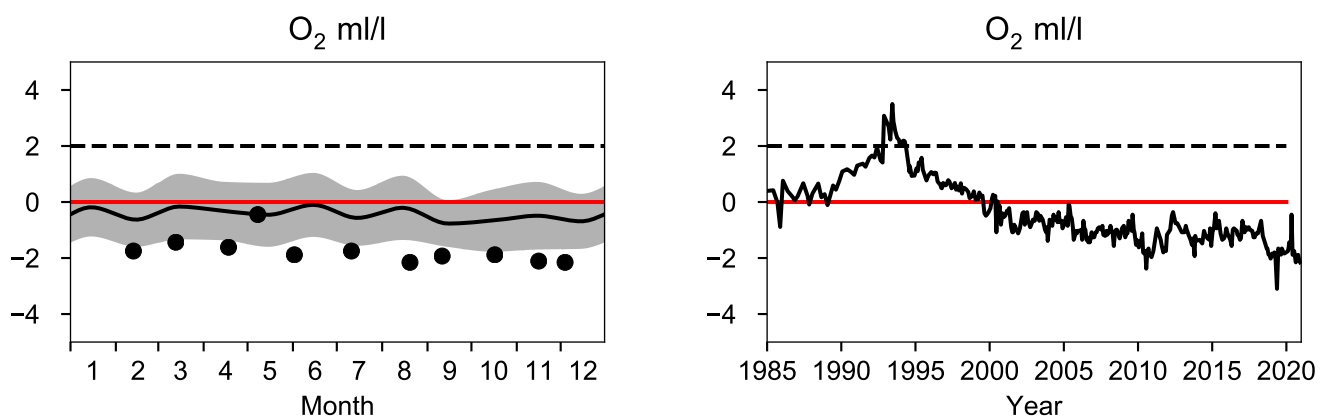


STATION BY32 NORRKÖPINGSDJ SURFACE WATER (0-10 m)

Annual Cycles

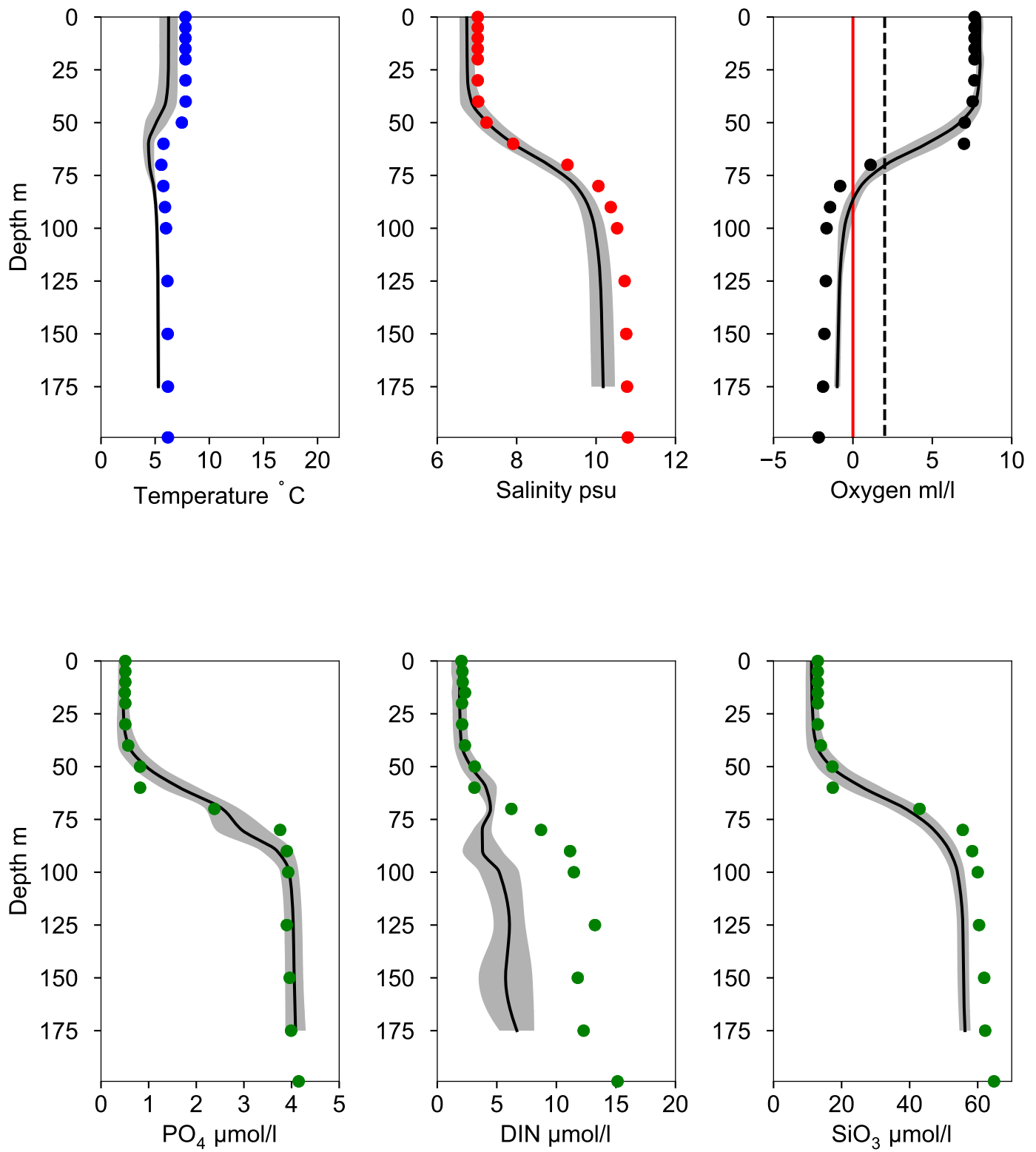


OXYGEN IN BOTTOM WATER (depth >= 175 m)



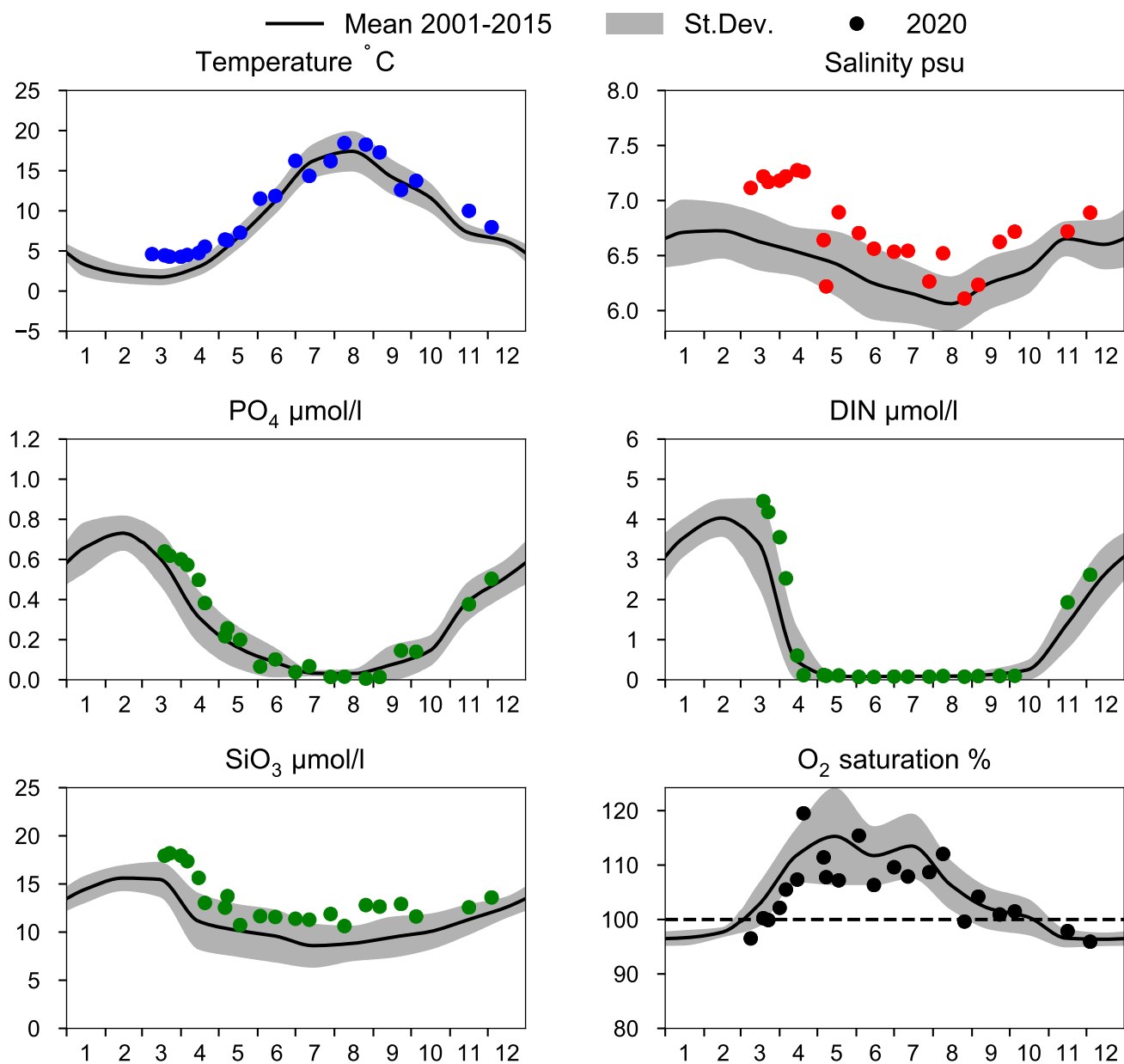
Vertical profiles BY32 NORRKÖPINGSDJ December

— Mean 2001-2015 St.Dev. • 2020-12-04

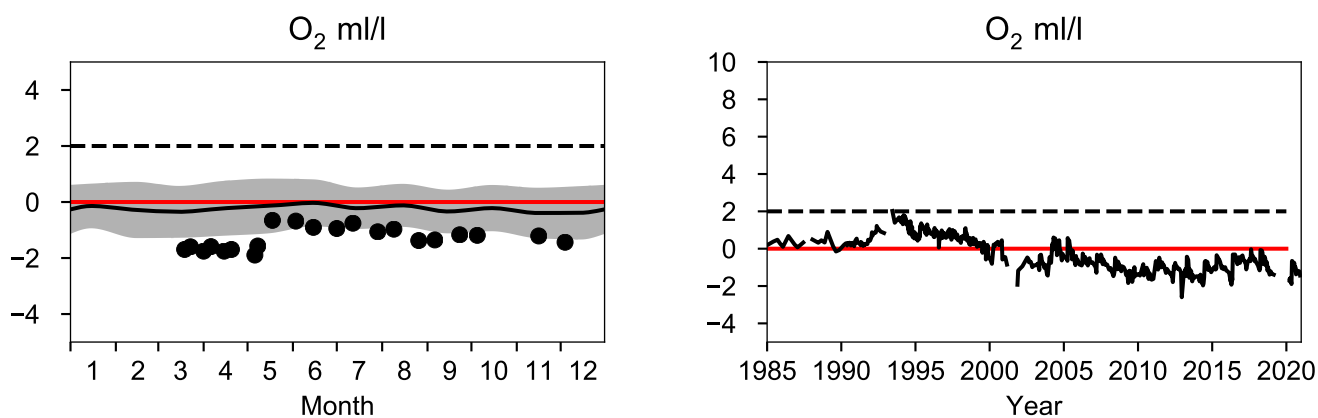


STATION BY31 LANDSORTSDJ SURFACE WATER (0-10 m)

Annual Cycles

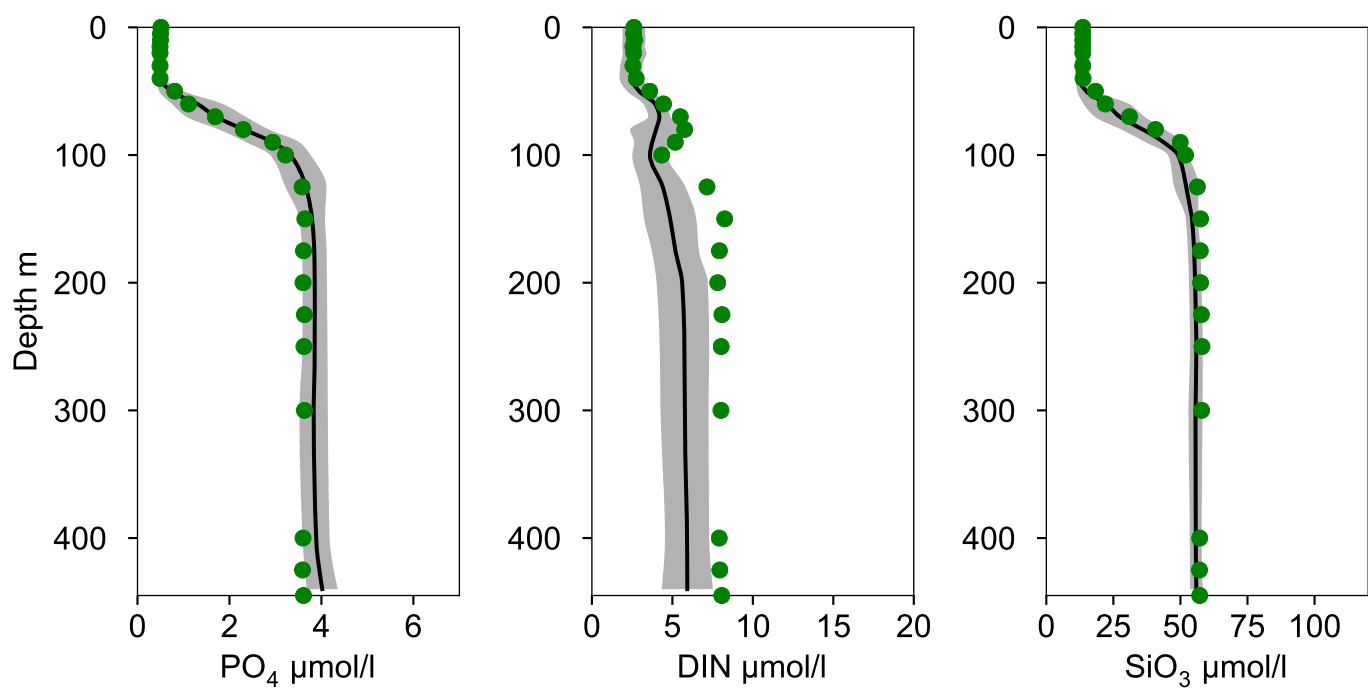
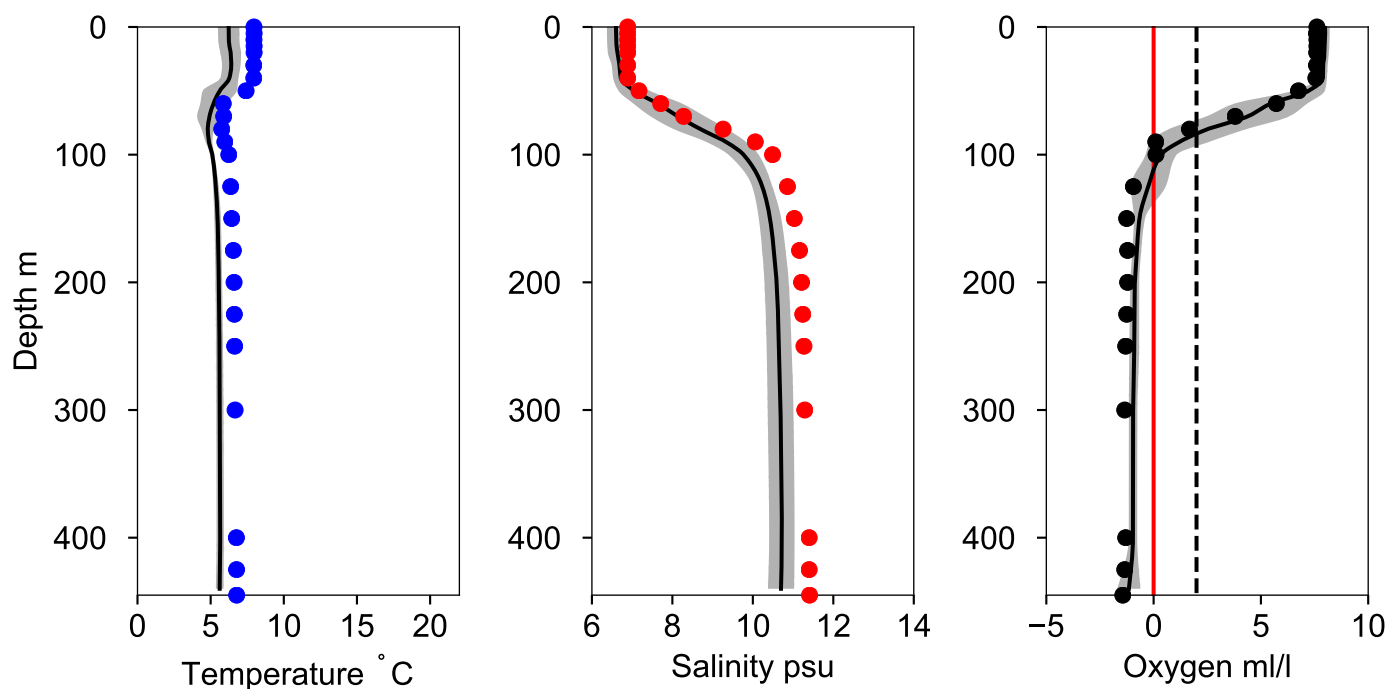


OXYGEN IN BOTTOM WATER (depth >= 419 m)



Vertical profiles BY31 LANDSORTSDJ December

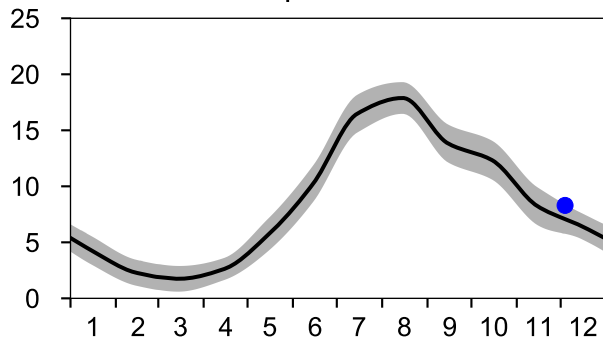
— Mean 2001-2015 St.Dev. • 2020-12-04



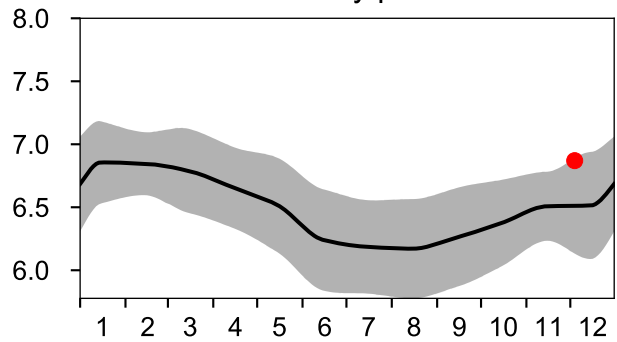
STATION HUVUDSKÄR SURFACE WATER (0-10 m)

Annual Cycles

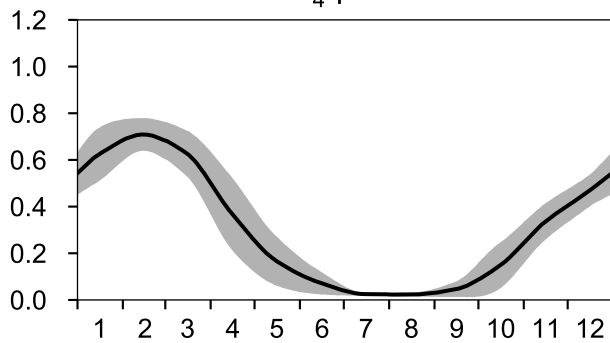
— Mean 2001-2015
Temperature °C



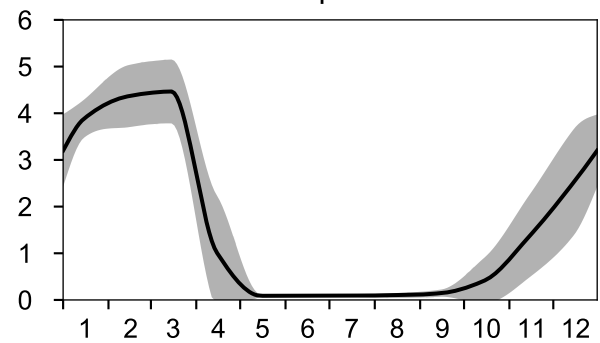
St.Dev. ● 2020
Salinity psu



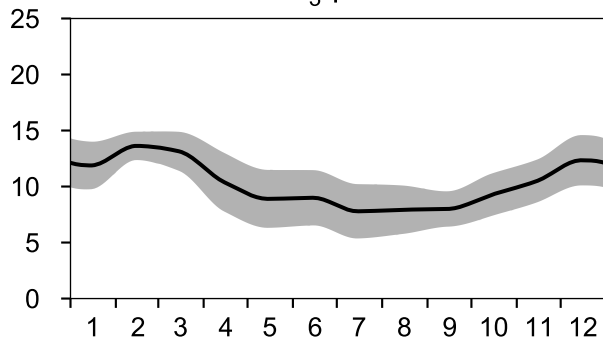
PO₄ µmol/l



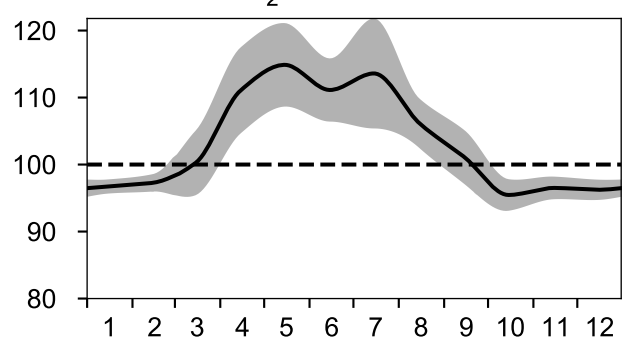
DIN µmol/l



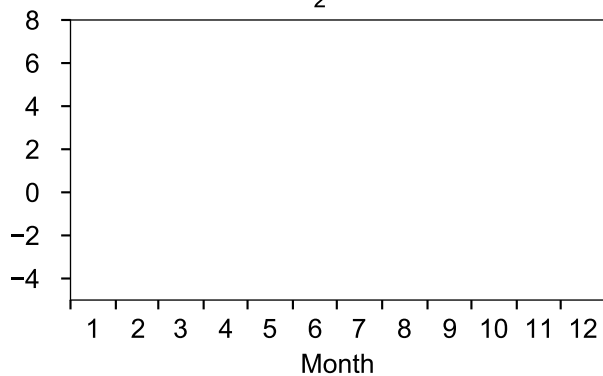
SiO₃ µmol/l



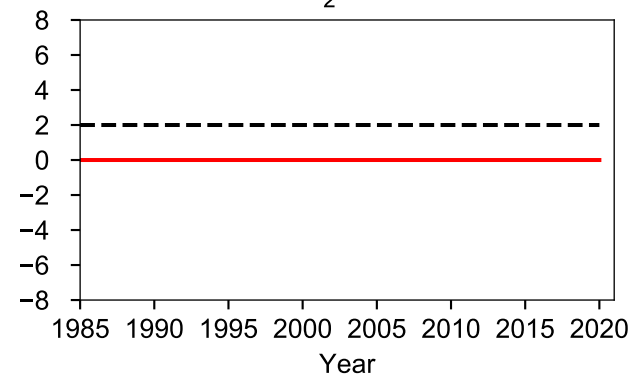
O₂ saturation %



O₂ ml/l

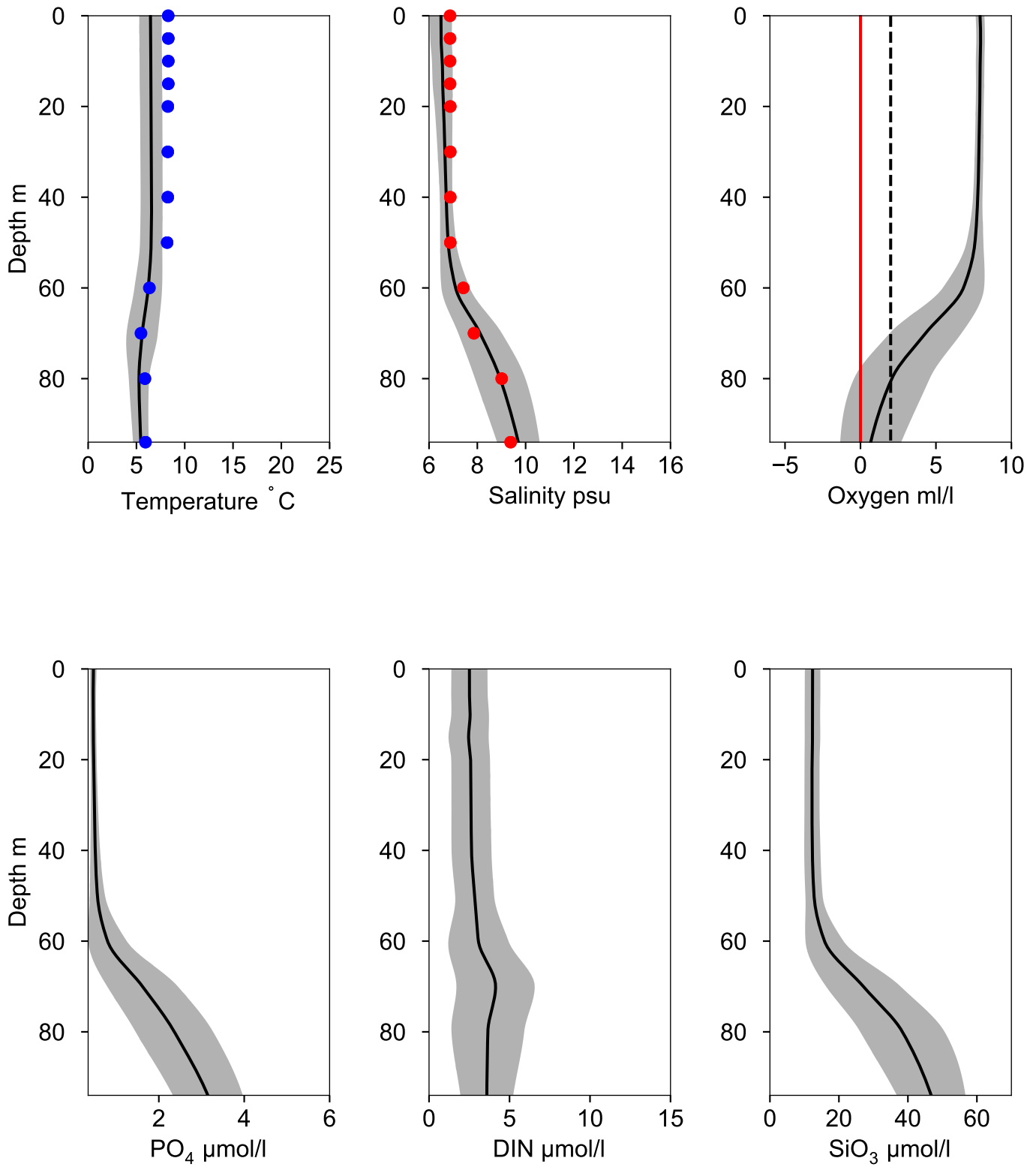


O₂ ml/l



Vertical profiles HUVUDSKÄR December

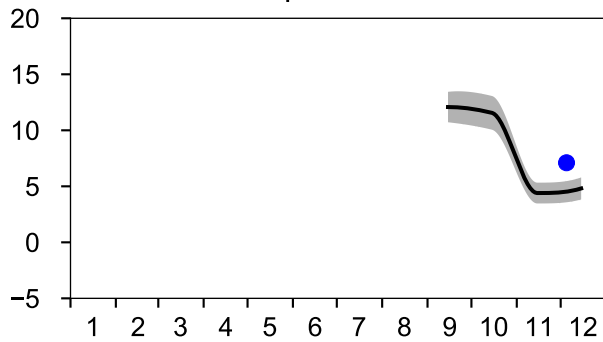
— Mean 2001-2015 St.Dev. • 2020-12-04



STATION F64 SOLOVJEVA SURFACE WATER (0-10 m)

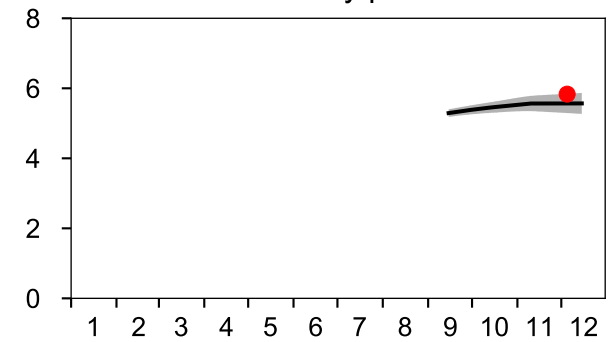
Annual Cycles

— Mean 2001-2015
Temperature °C

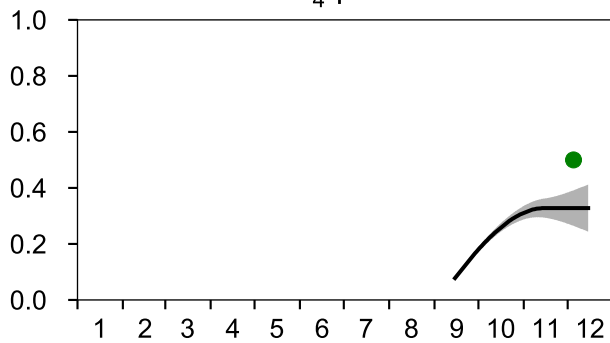


■ St.Dev.

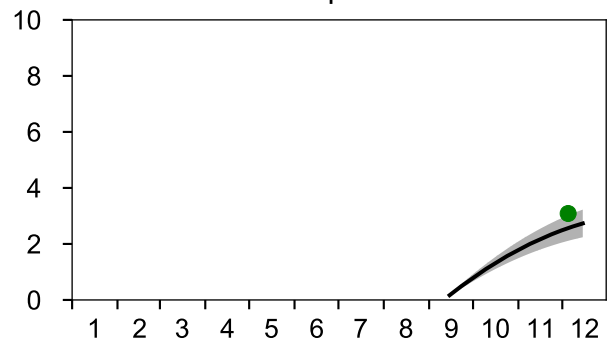
● 2020
Salinity psu



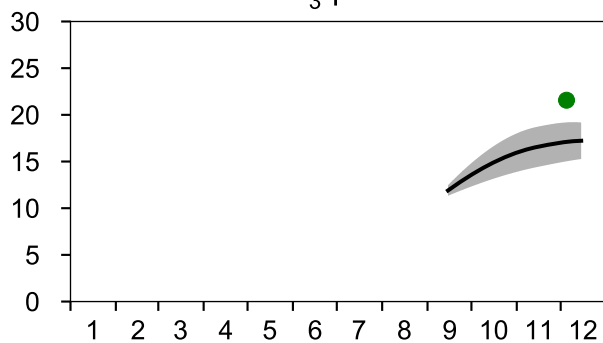
PO₄ µmol/l



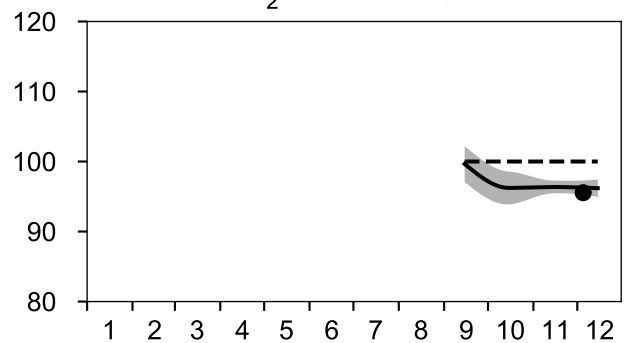
DIN µmol/l



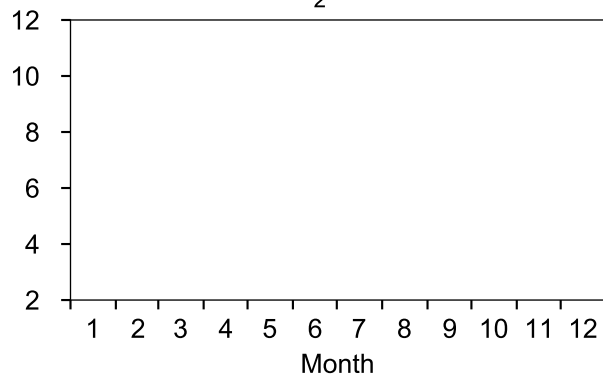
SiO₃ µmol/l



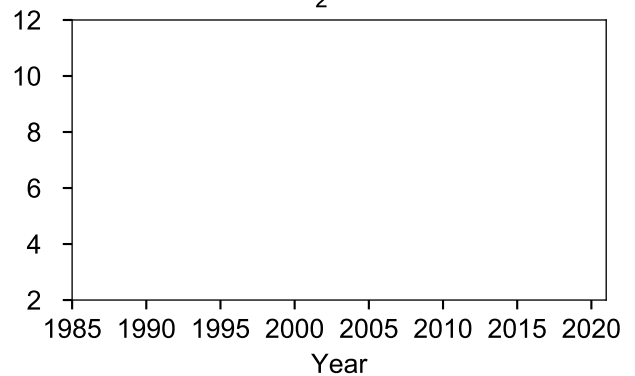
O₂ saturation %



O₂ ml/l

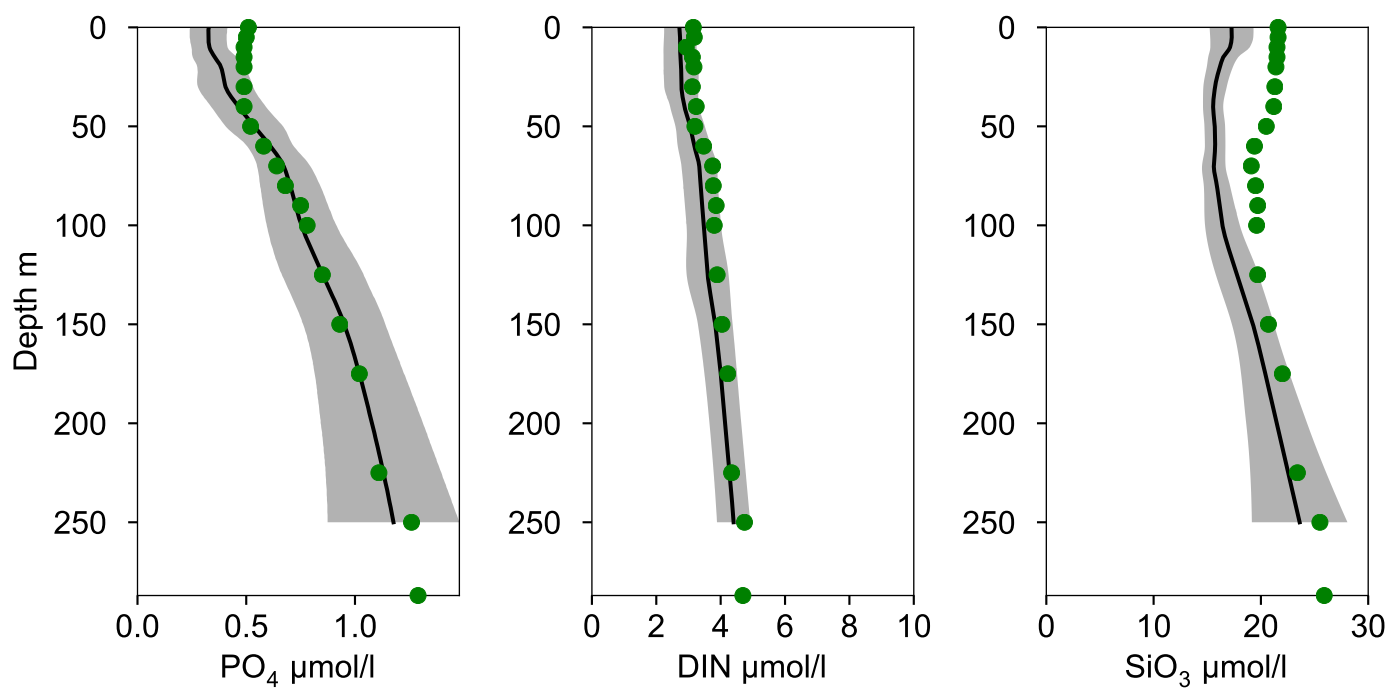
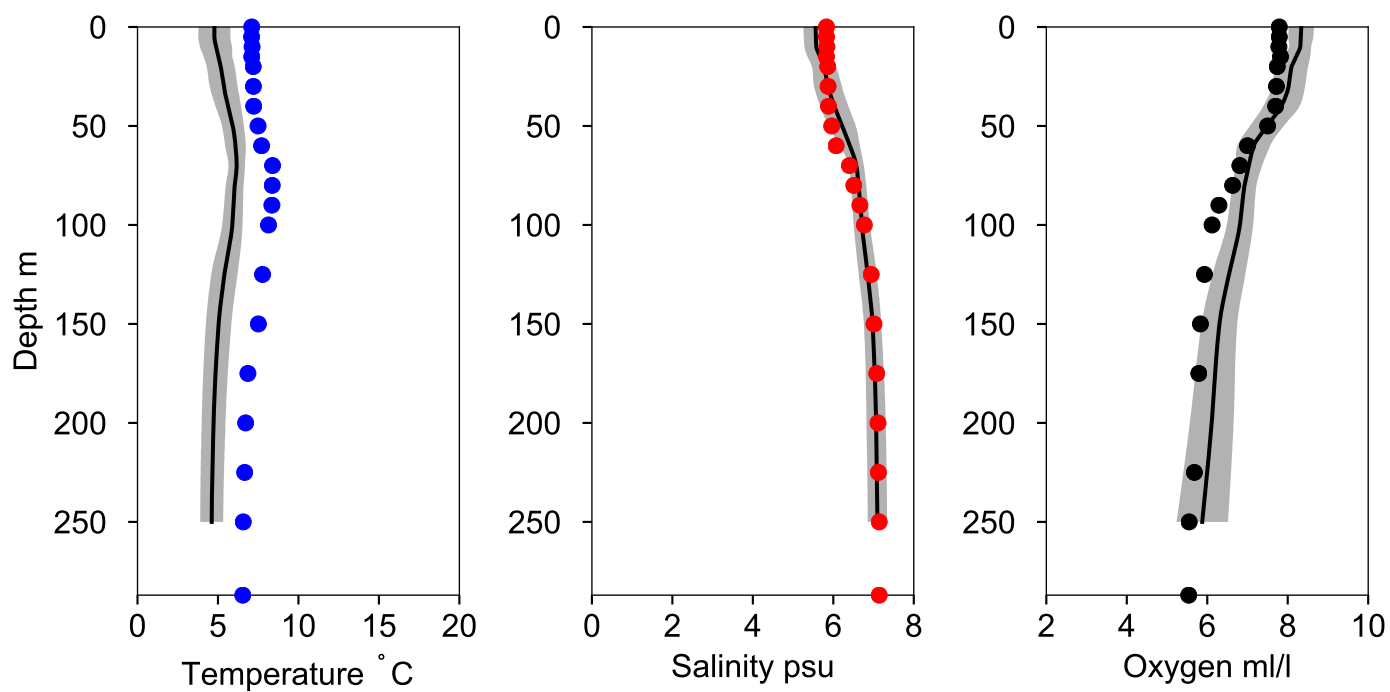


O₂ ml/l



Vertical profiles F64 SOLOVJEVA December

— Mean 2001-2015 St.Dev. • 2020-12-05



STATION UNDERSTEN SURFACE WATER (0-10 m)

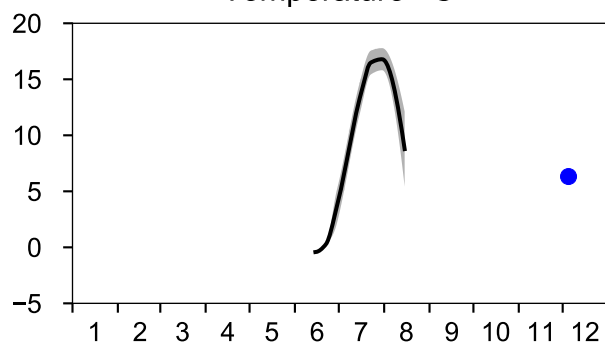
Annual Cycles

— Mean 2001-2015

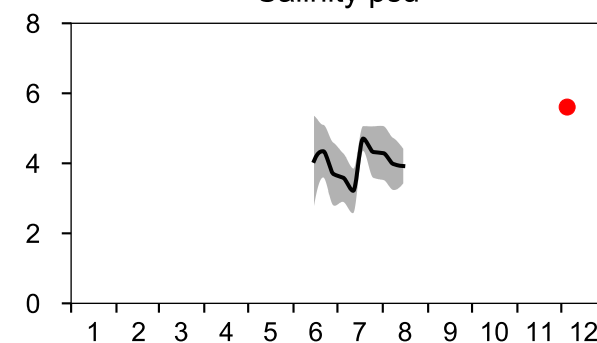
■ St.Dev.

● 2020

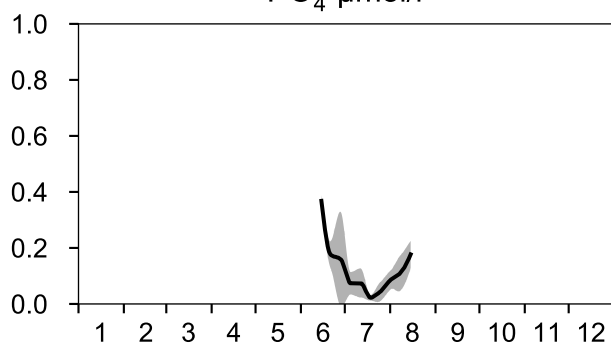
Temperature °C



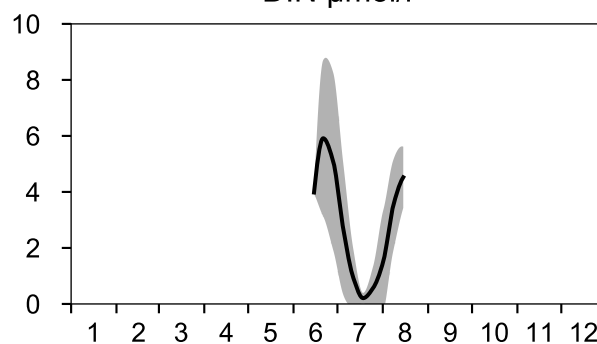
Salinity psu



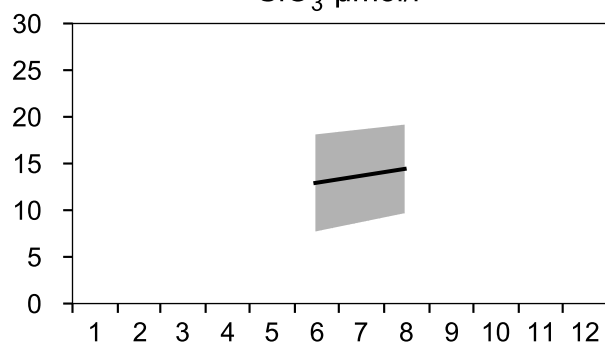
PO₄ µmol/l



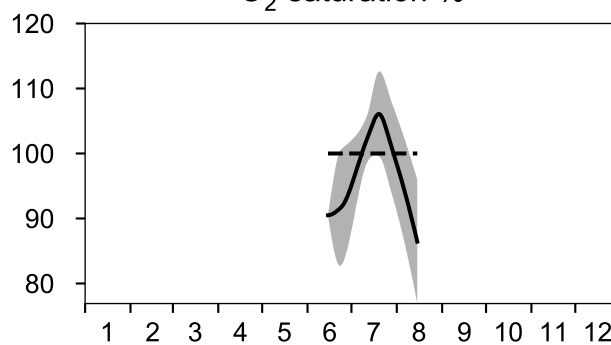
DIN µmol/l



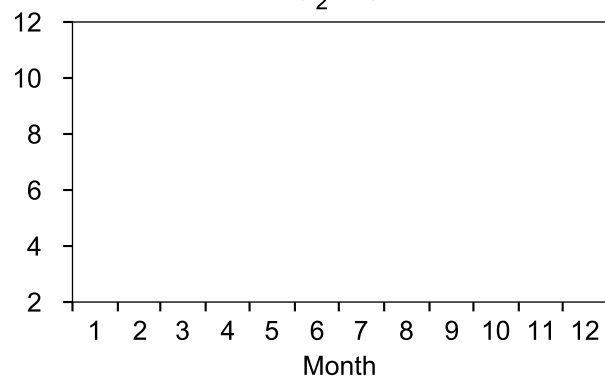
SiO₃ µmol/l



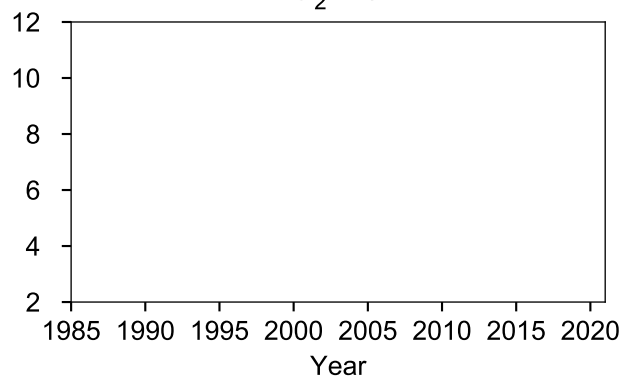
O₂ saturation %



O₂ ml/l

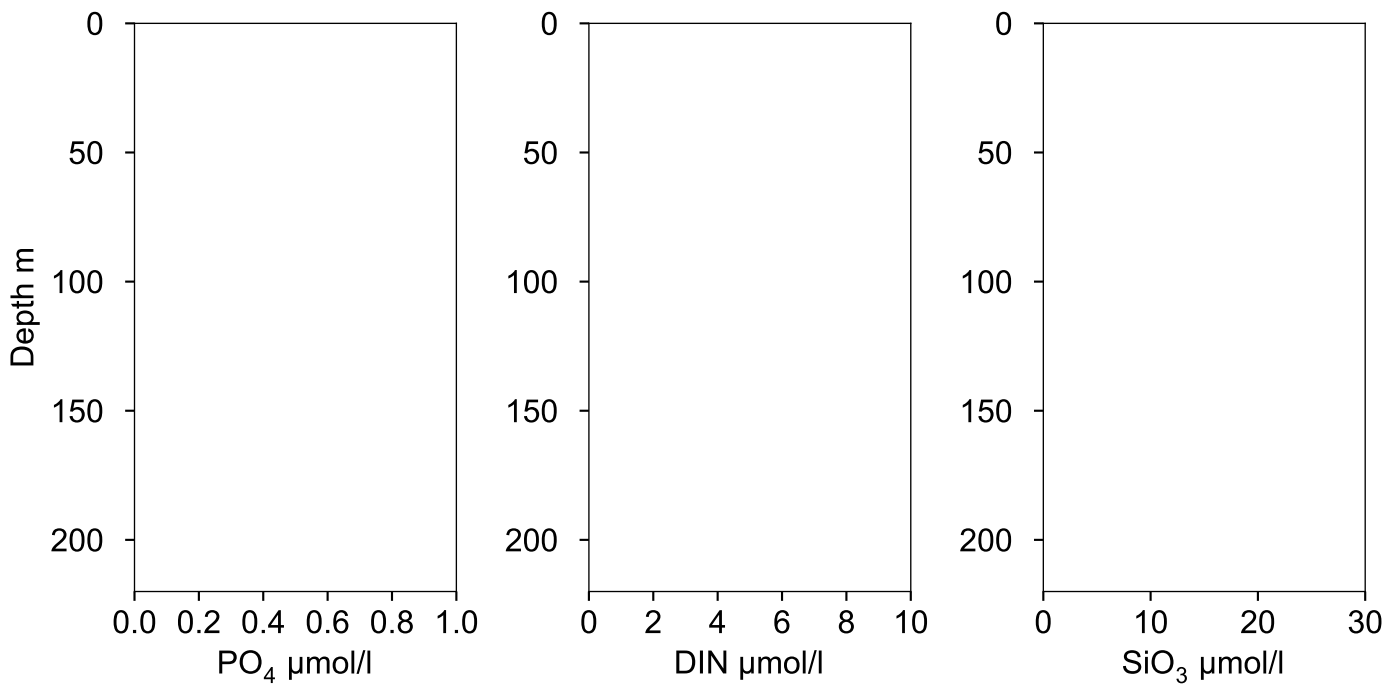
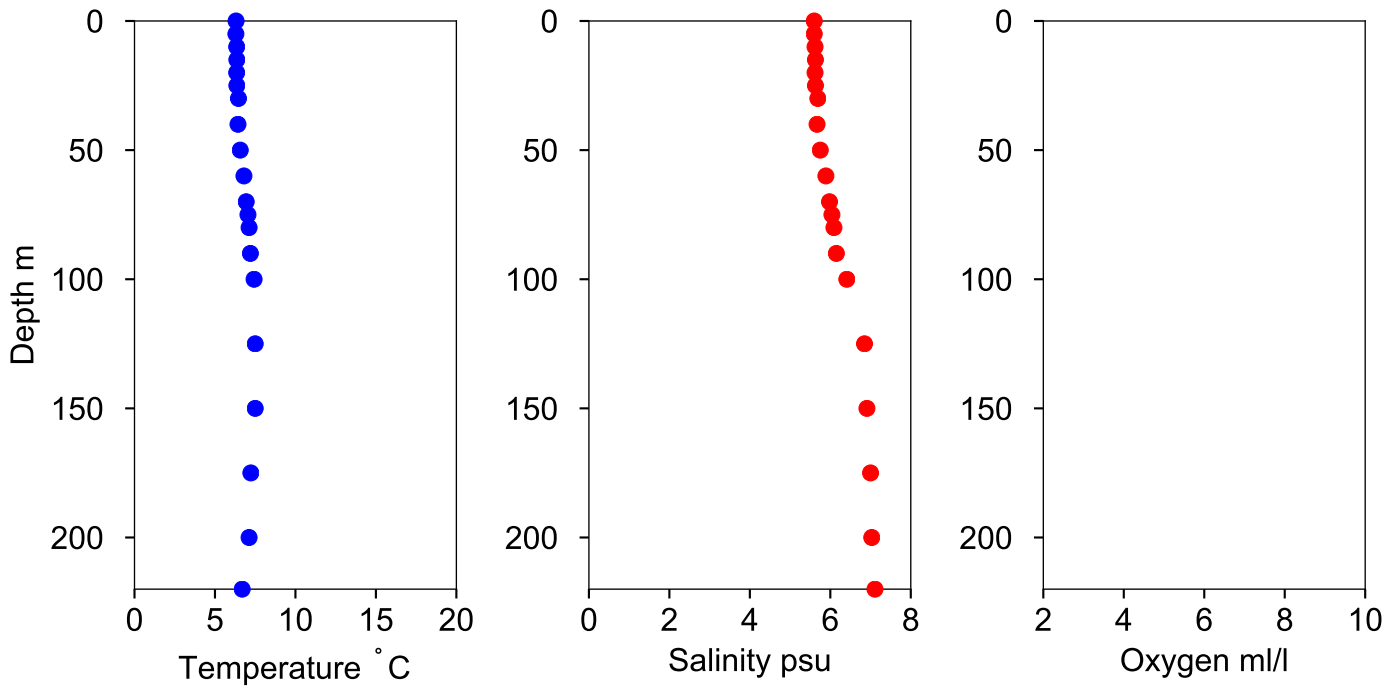


O₂ ml/l



Vertical profiles UNDERSTEN December

— Mean 2001-2015 ■ St.Dev. ● 2020-12-05



STATION SR5/LL4 SURFACE WATER (0-10 m)

Annual Cycles

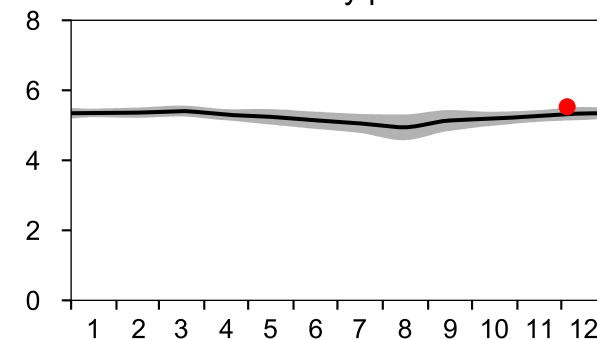
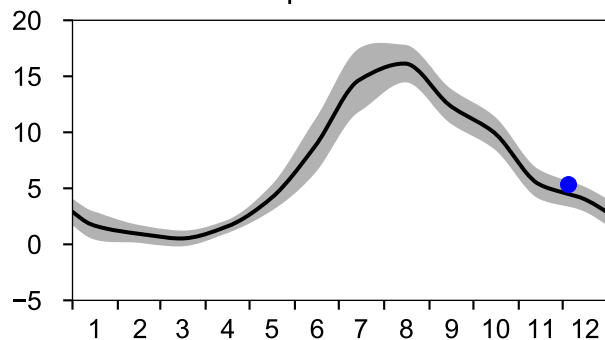
— Mean 2001-2015

■ St.Dev.

● 2020

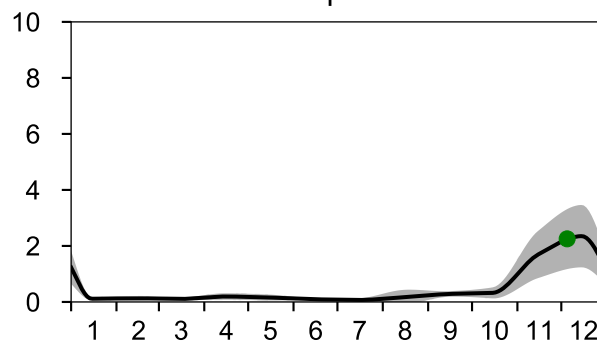
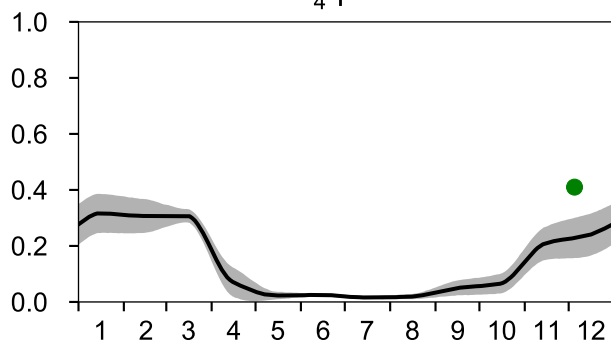
Temperature °C

Salinity psu



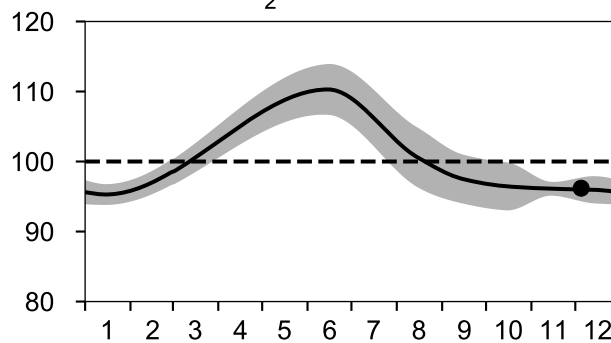
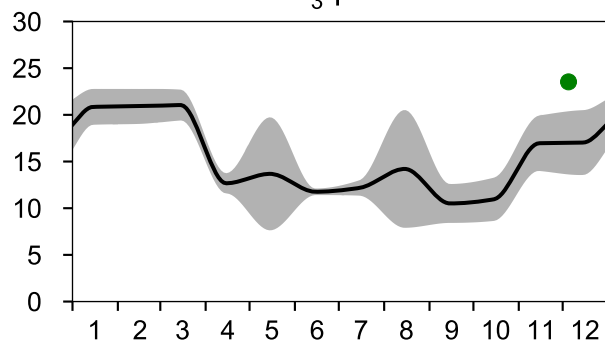
PO₄ µmol/l

DIN µmol/l



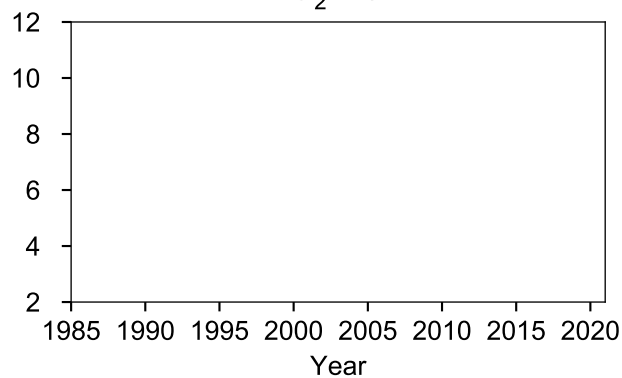
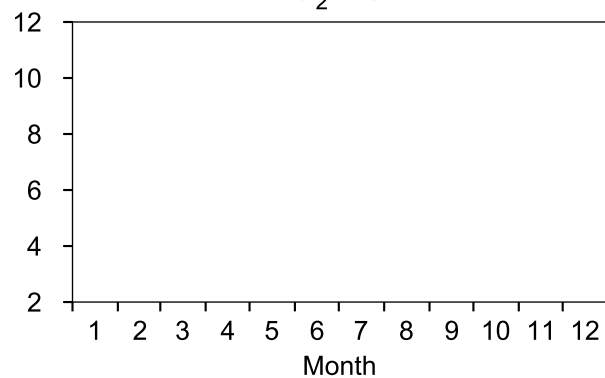
SiO₃ µmol/l

O₂ saturation %



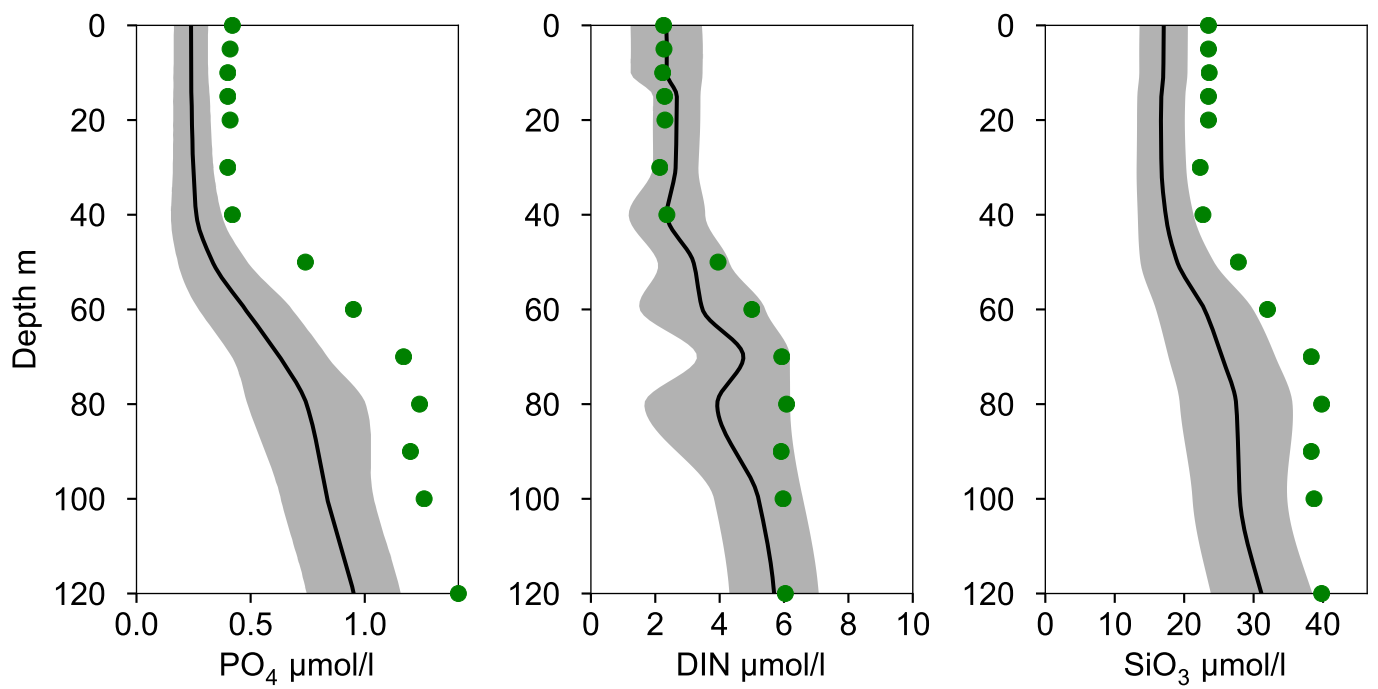
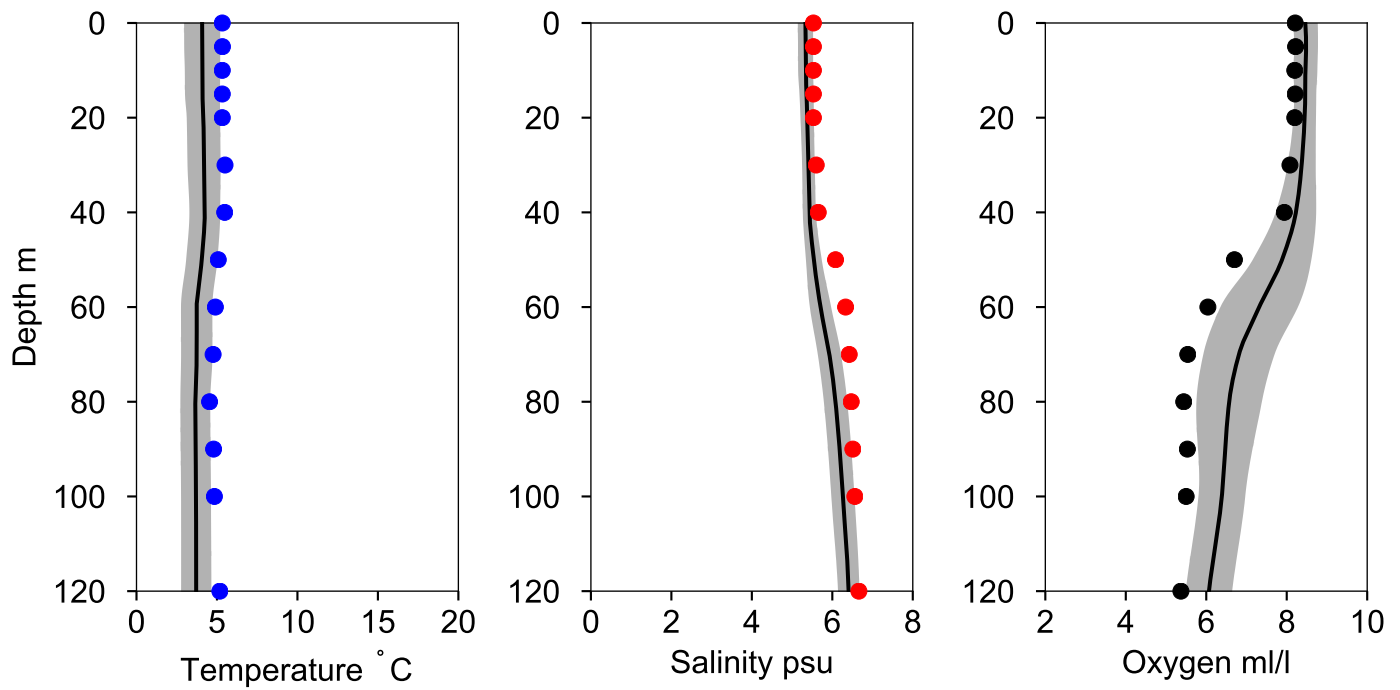
O₂ ml/l

O₂ ml/l



Vertical profiles SR5/LL4 December

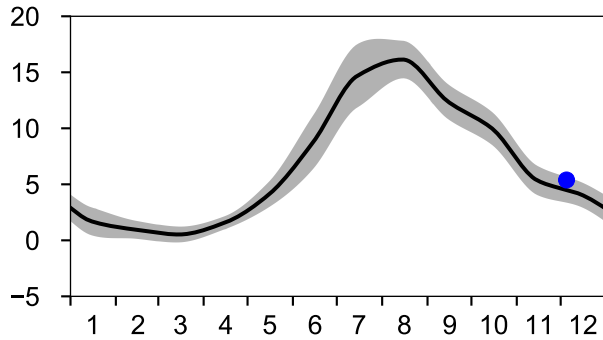
— Mean 2001-2015 St.Dev. • 2020-12-05



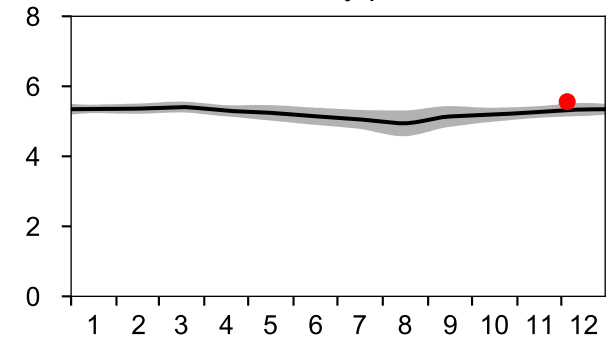
STATION SS29 SURFACE WATER (0-10 m)

Annual Cycles

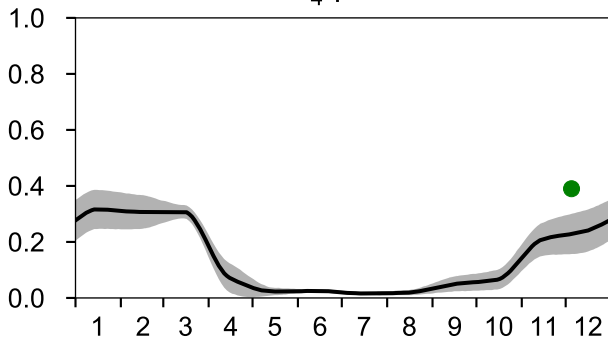
— Mean 2001-2015
Temperature °C



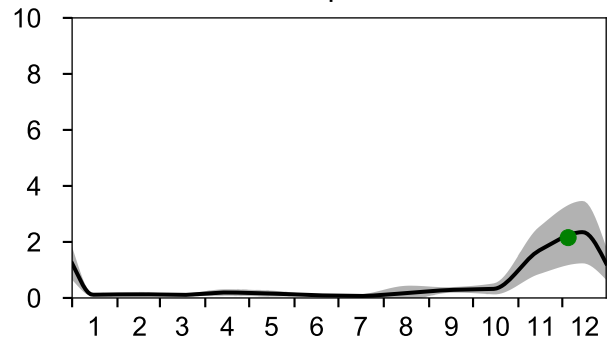
■ St.Dev. ● 2020
Salinity psu



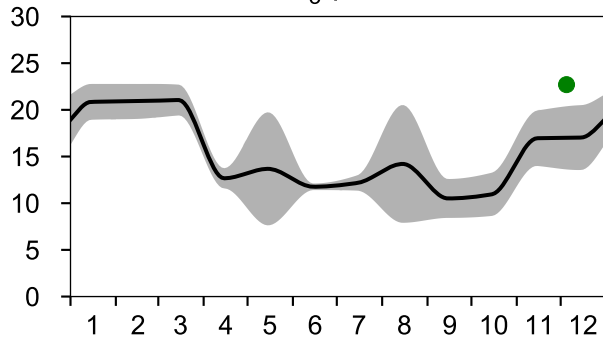
PO₄ μmol/l



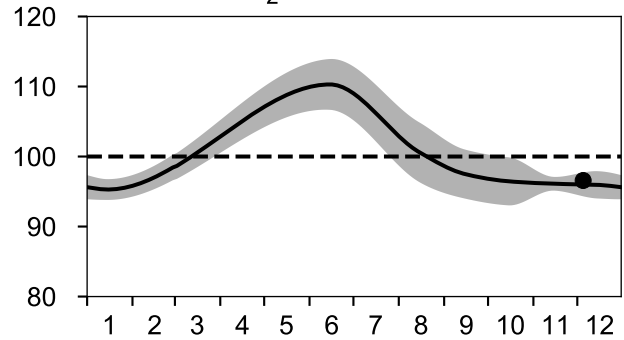
DIN μmol/l



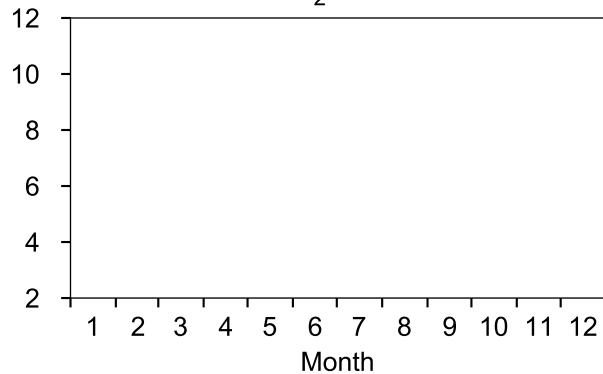
SiO₃ μmol/l



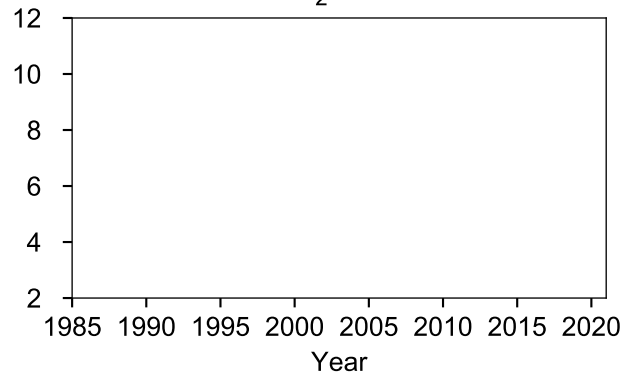
O₂ saturation %



O₂ ml/l

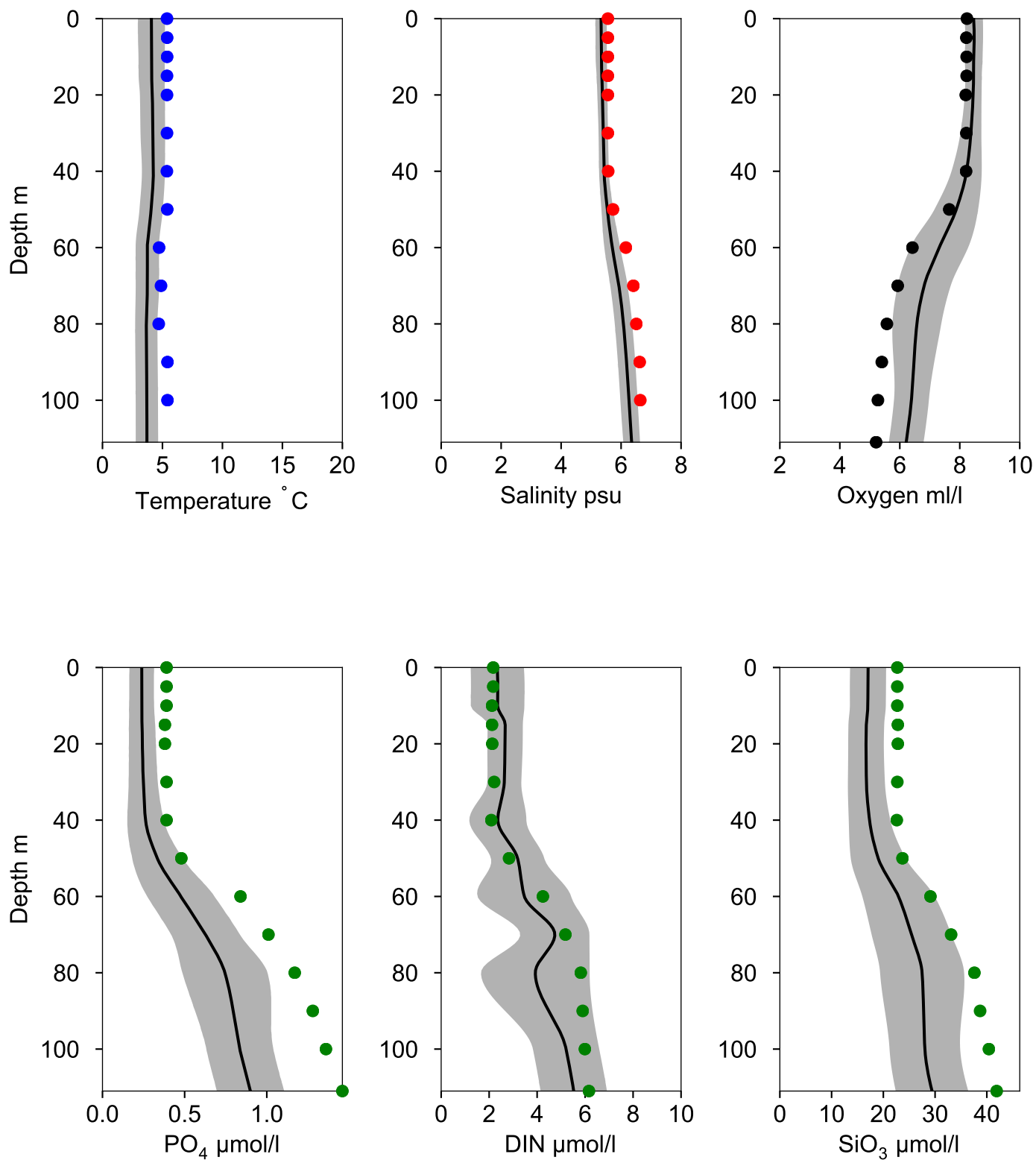


O₂ ml/l



Vertical profiles SS29 December

— Mean 2001-2015 St.Dev. • 2020-12-05



STATION SR8 SURFACE WATER (0-10 m)

Annual Cycles

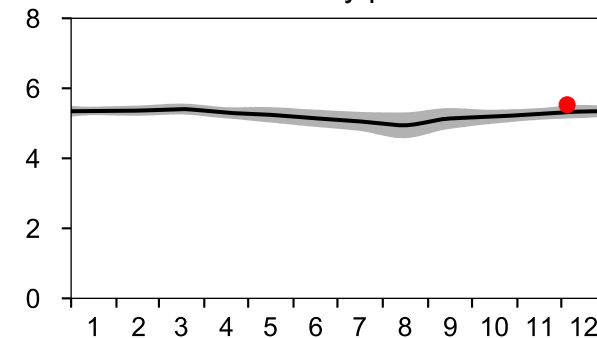
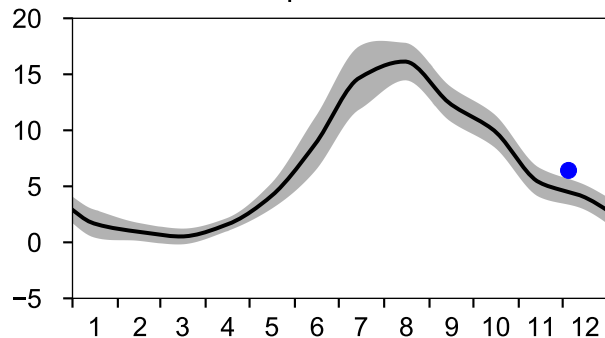
— Mean 2001-2015

■ St.Dev.

● 2020

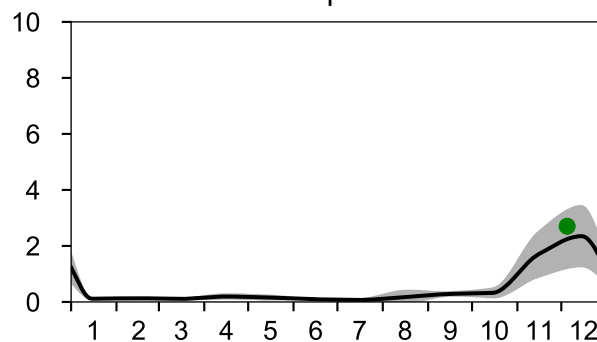
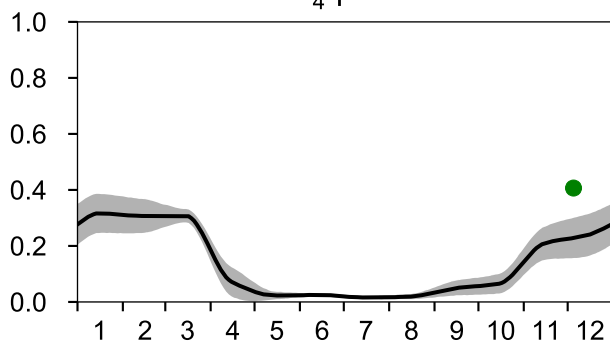
Temperature °C

Salinity psu



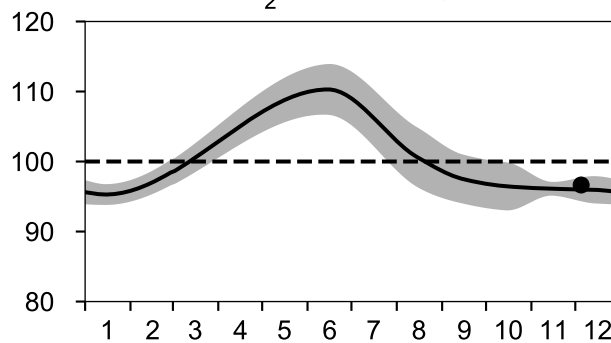
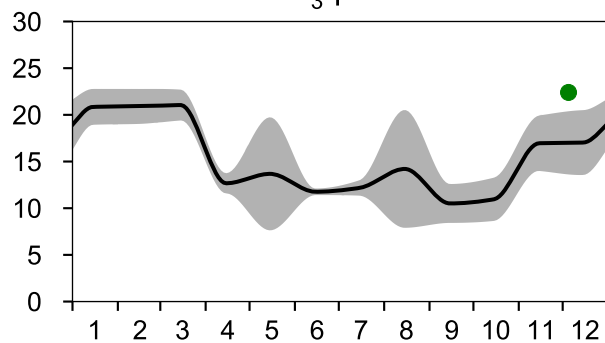
PO₄ µmol/l

DIN µmol/l



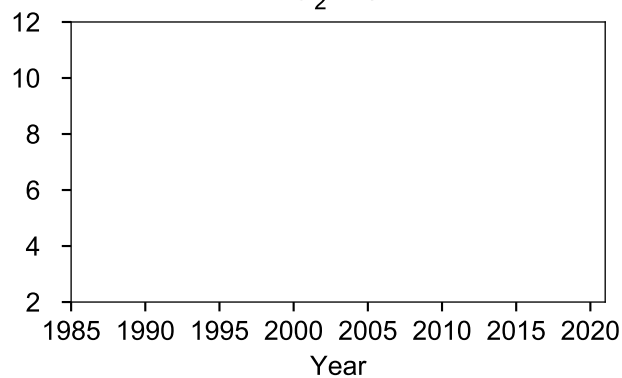
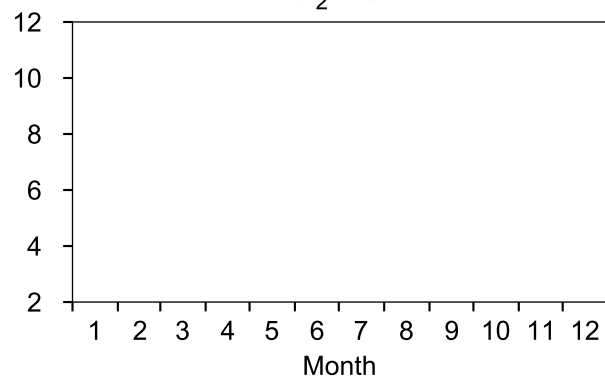
SiO₃ µmol/l

O₂ saturation %



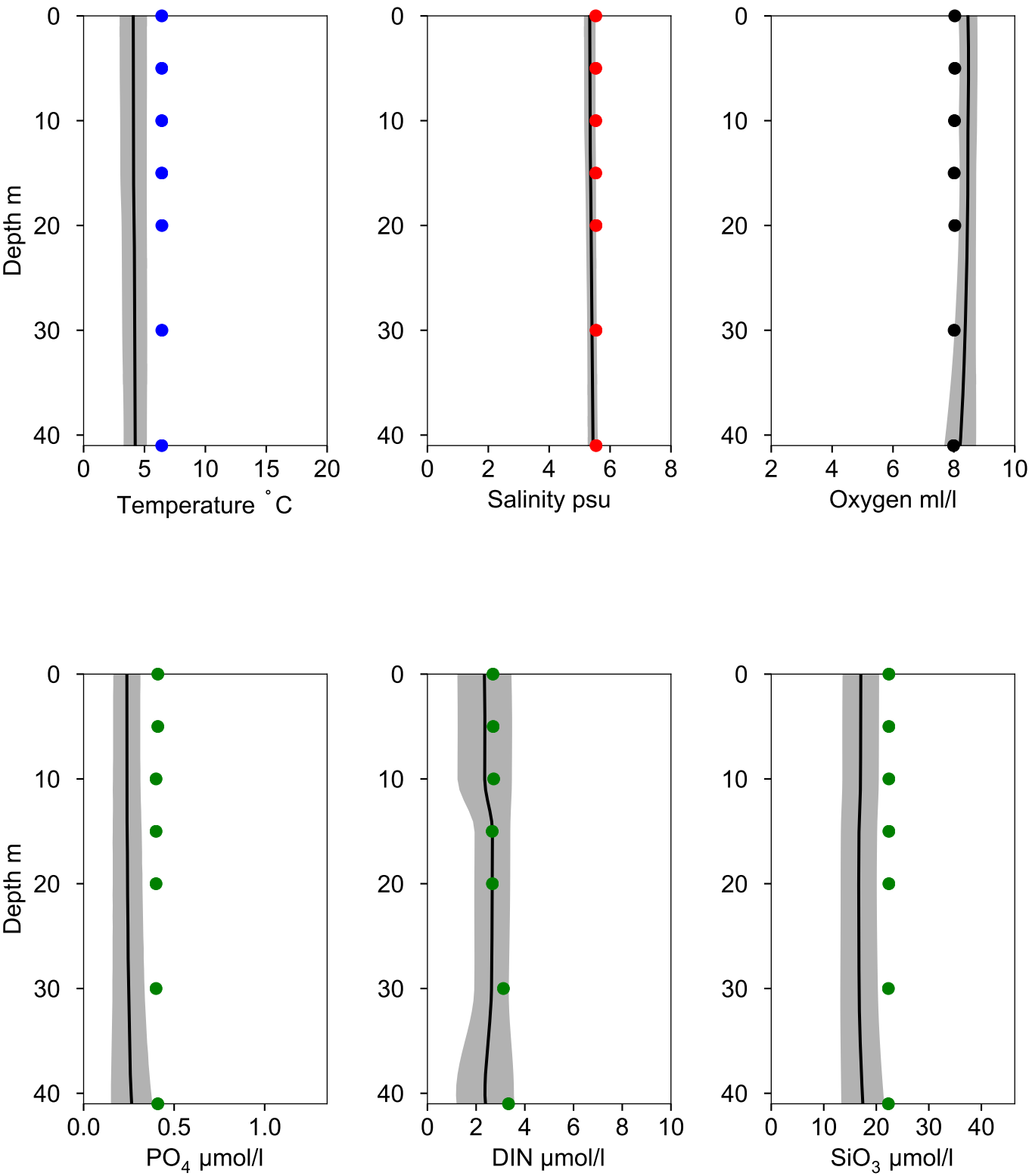
O₂ ml/l

O₂ ml/l



Vertical profiles SR8
December

— Mean 2001-2015 St.Dev. • 2020-12-05



STATION F26 / C15 SURFACE WATER (0-10 m)

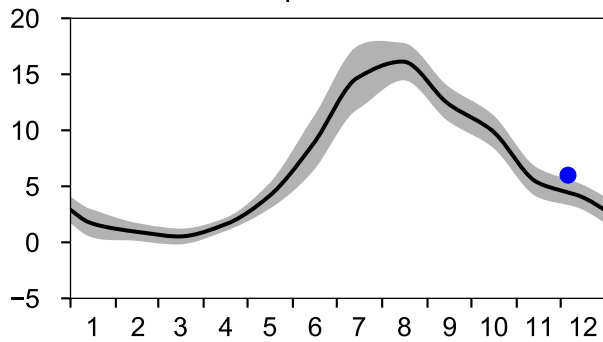
Annual Cycles

— Mean 2001-2015

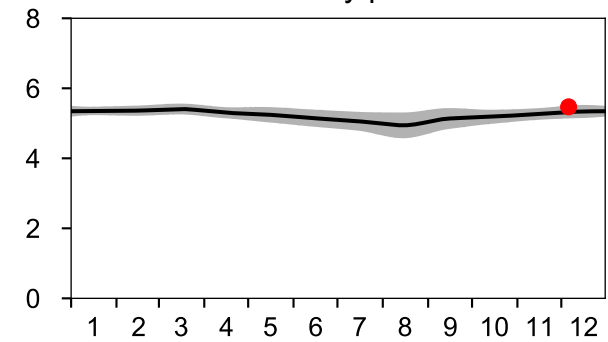
■ St.Dev.

● 2020

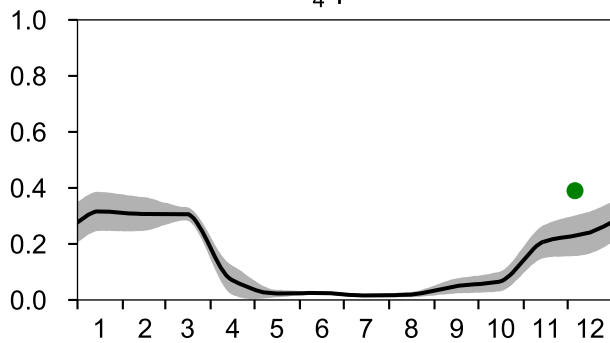
Temperature °C



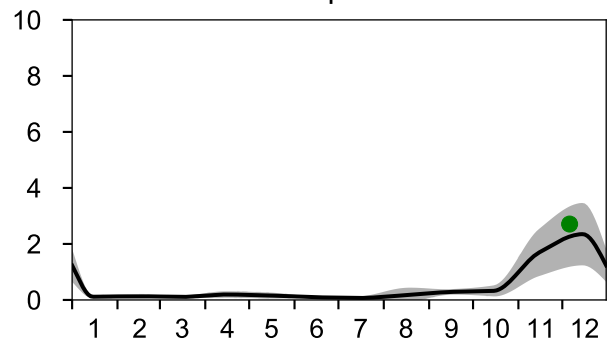
Salinity psu



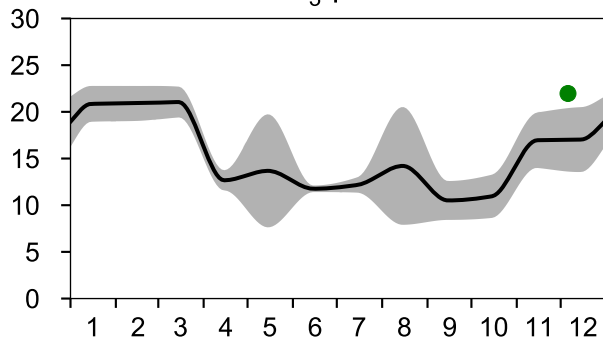
PO₄ µmol/l



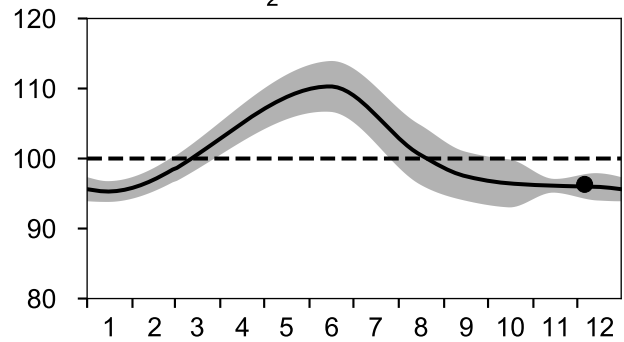
DIN µmol/l



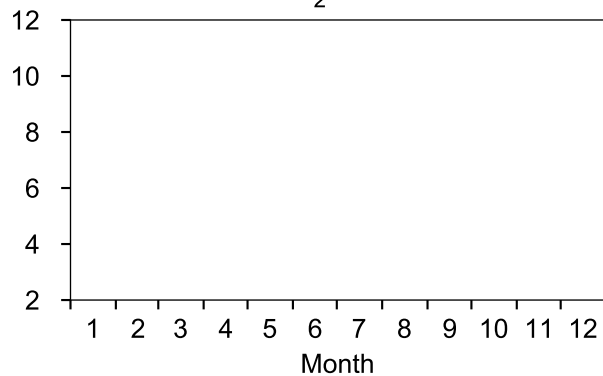
SiO₃ µmol/l



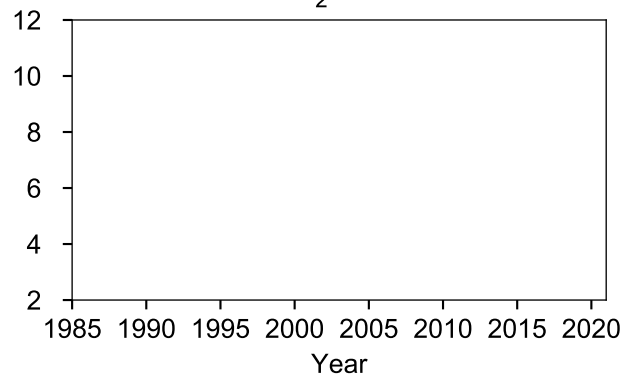
O₂ saturation %



O₂ ml/l

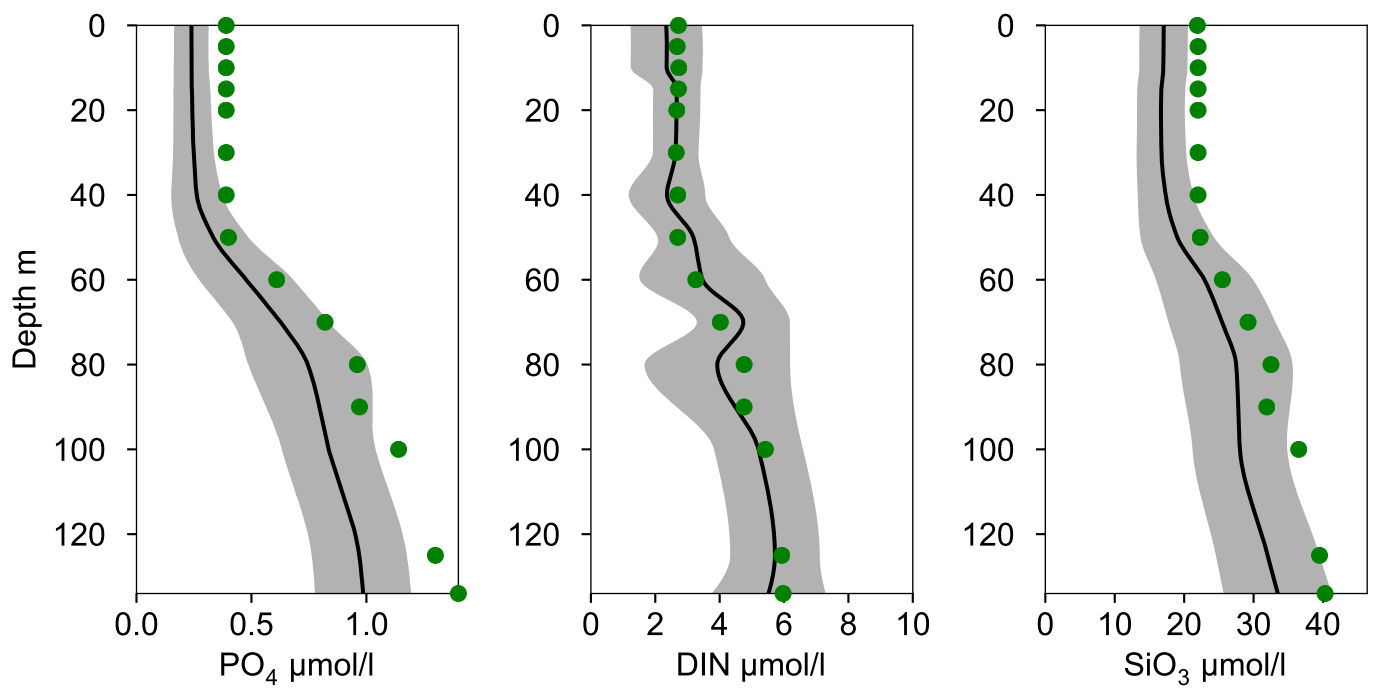
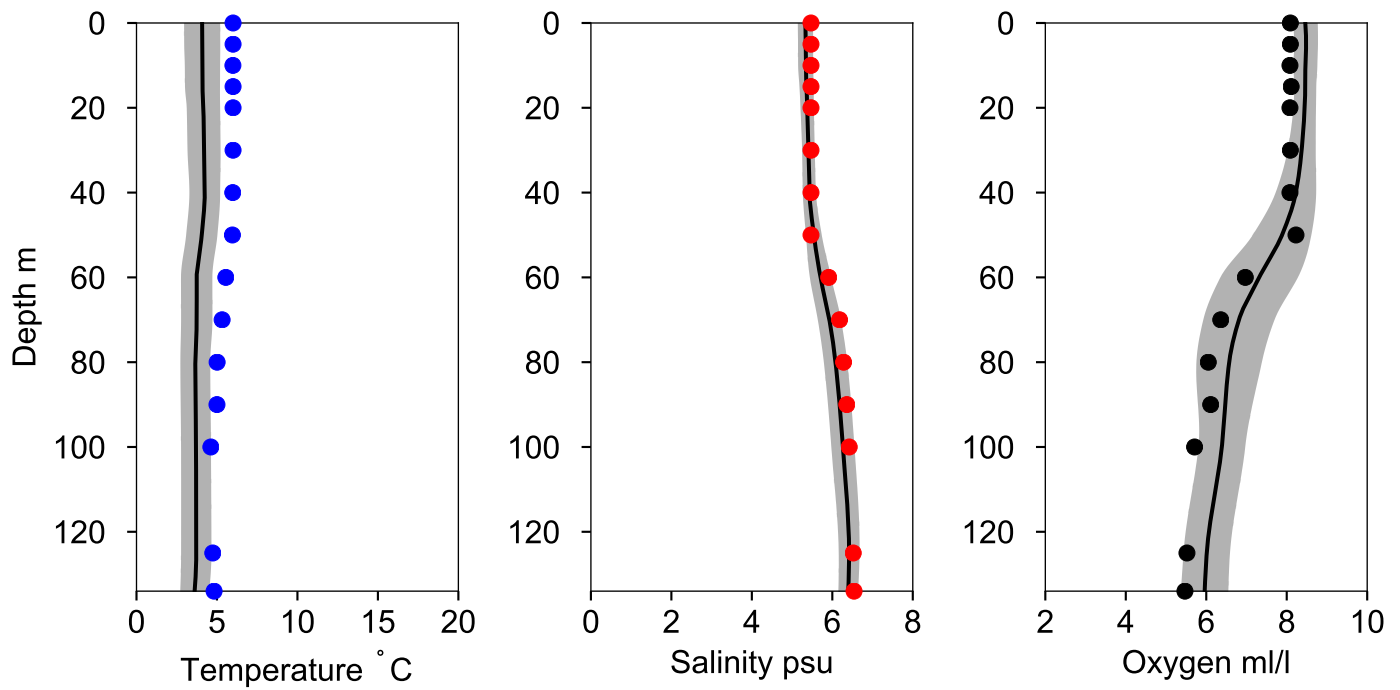


O₂ ml/l



Vertical profiles F26 / C15 December

— Mean 2001-2015 St.Dev. • 2020-12-06



STATION MS6 SURFACE WATER (0-10 m)

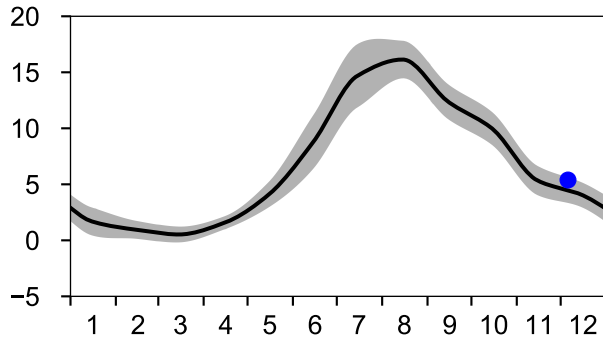
Annual Cycles

— Mean 2001-2015

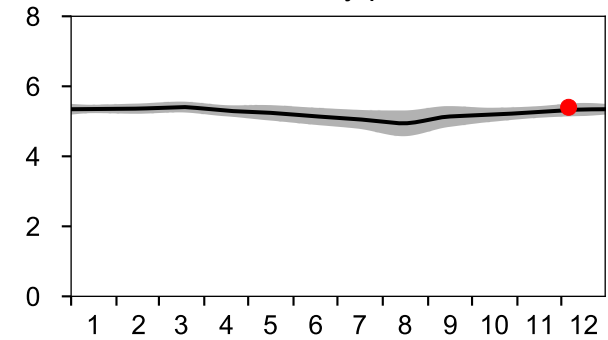
■ St.Dev.

● 2020

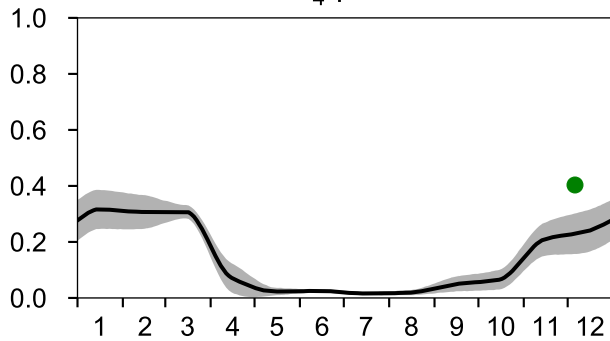
Temperature °C



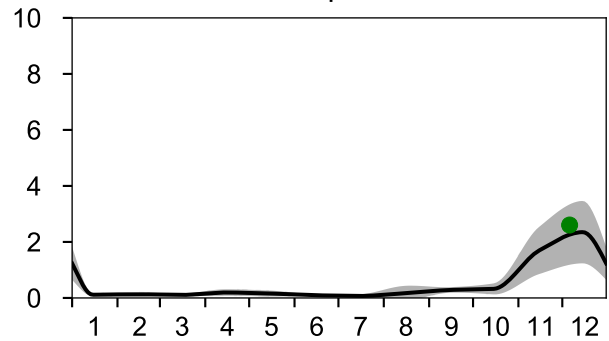
Salinity psu



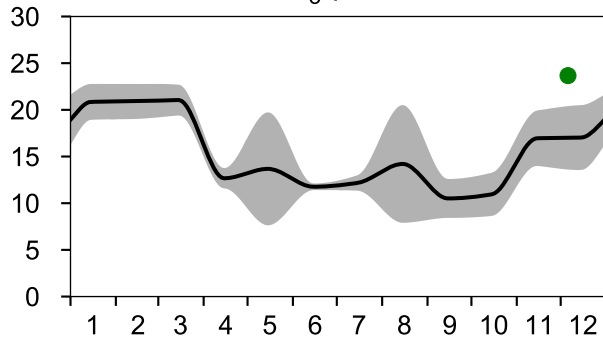
PO₄ µmol/l



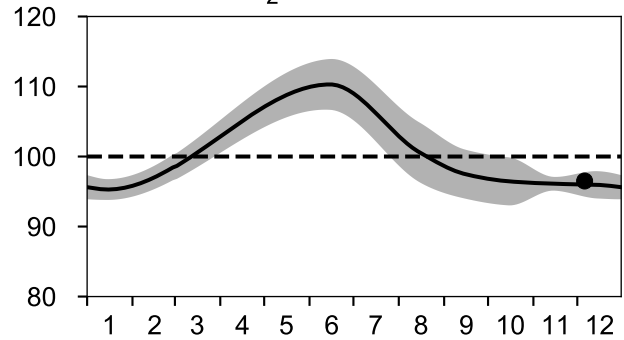
DIN µmol/l



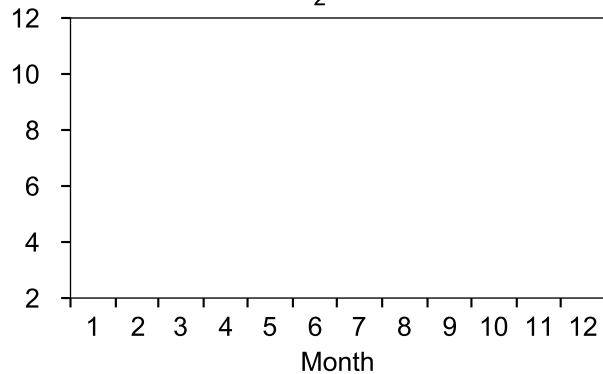
SiO₃ µmol/l



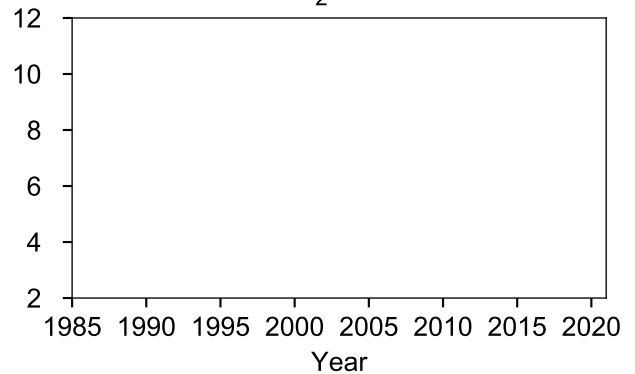
O₂ saturation %



O₂ ml/l

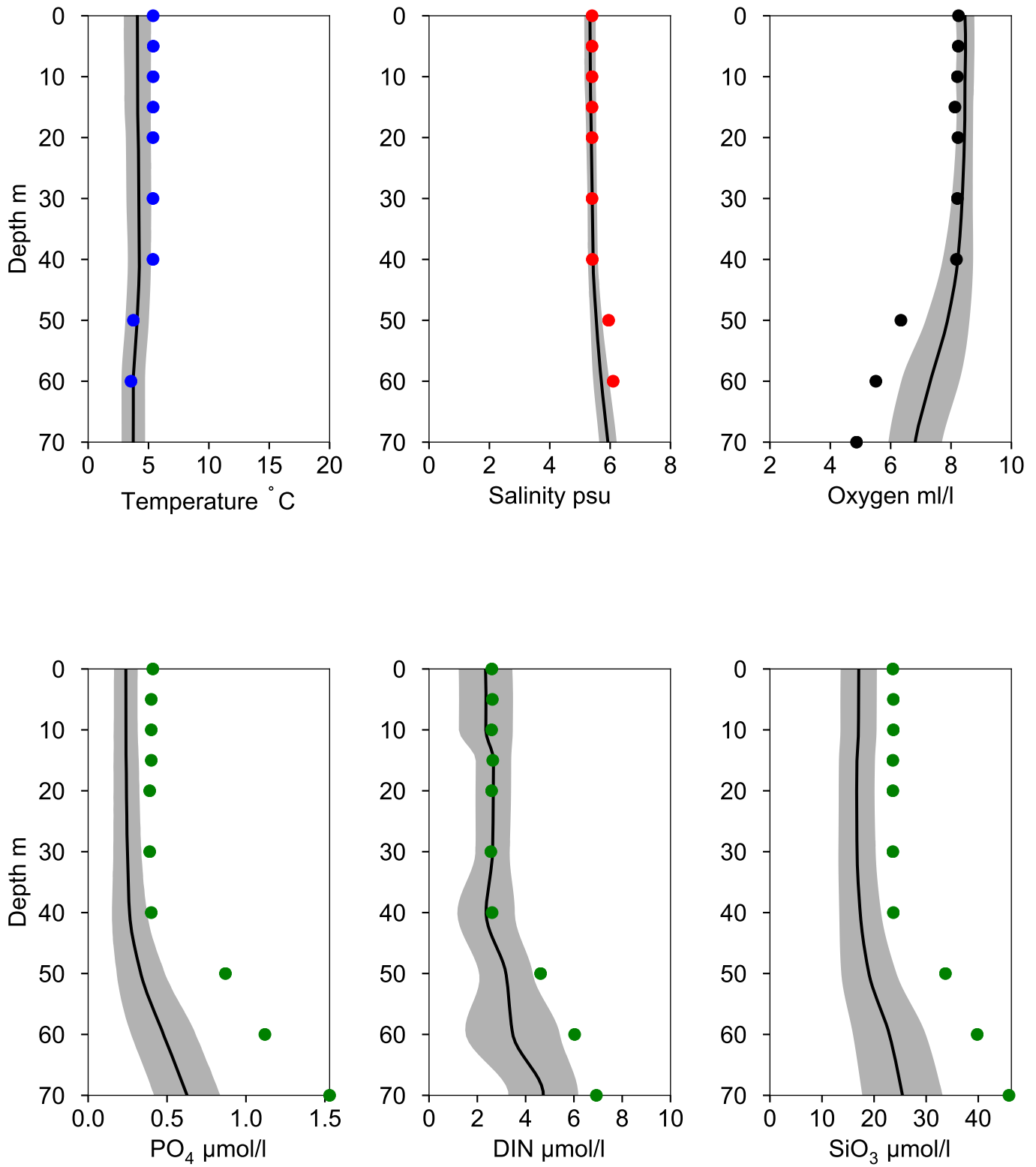


O₂ ml/l



Vertical profiles MS6 December

— Mean 2001-2015 St.Dev. • 2020-12-06



STATION US5B / C1 SURFACE WATER (0-10 m)

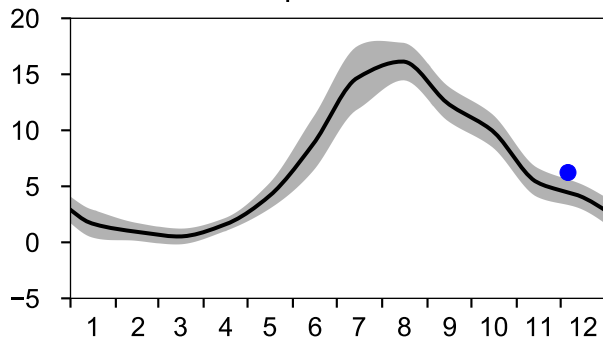
Annual Cycles

— Mean 2001-2015

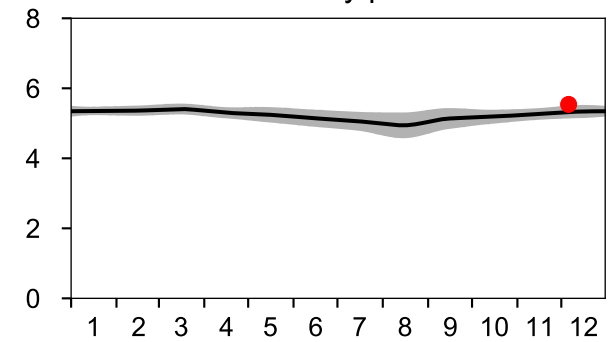
■ St.Dev.

● 2020

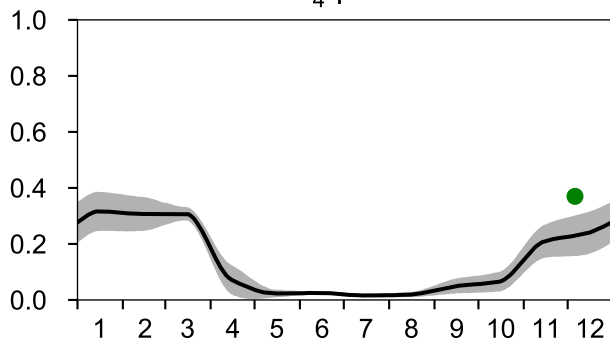
Temperature °C



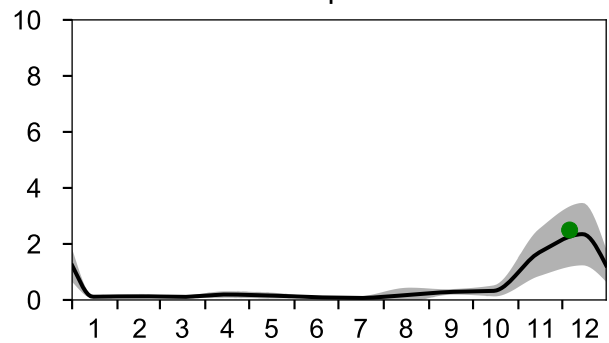
Salinity psu



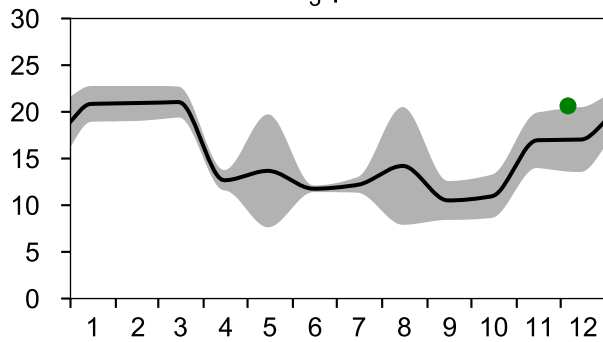
PO₄ µmol/l



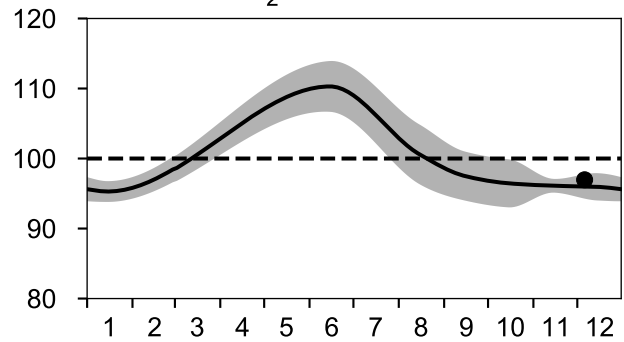
DIN µmol/l



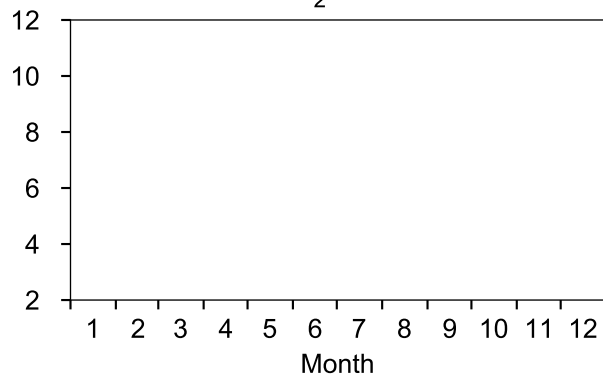
SiO₃ µmol/l



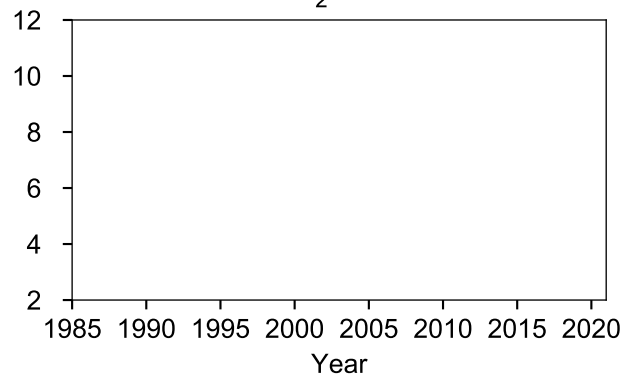
O₂ saturation %



O₂ ml/l

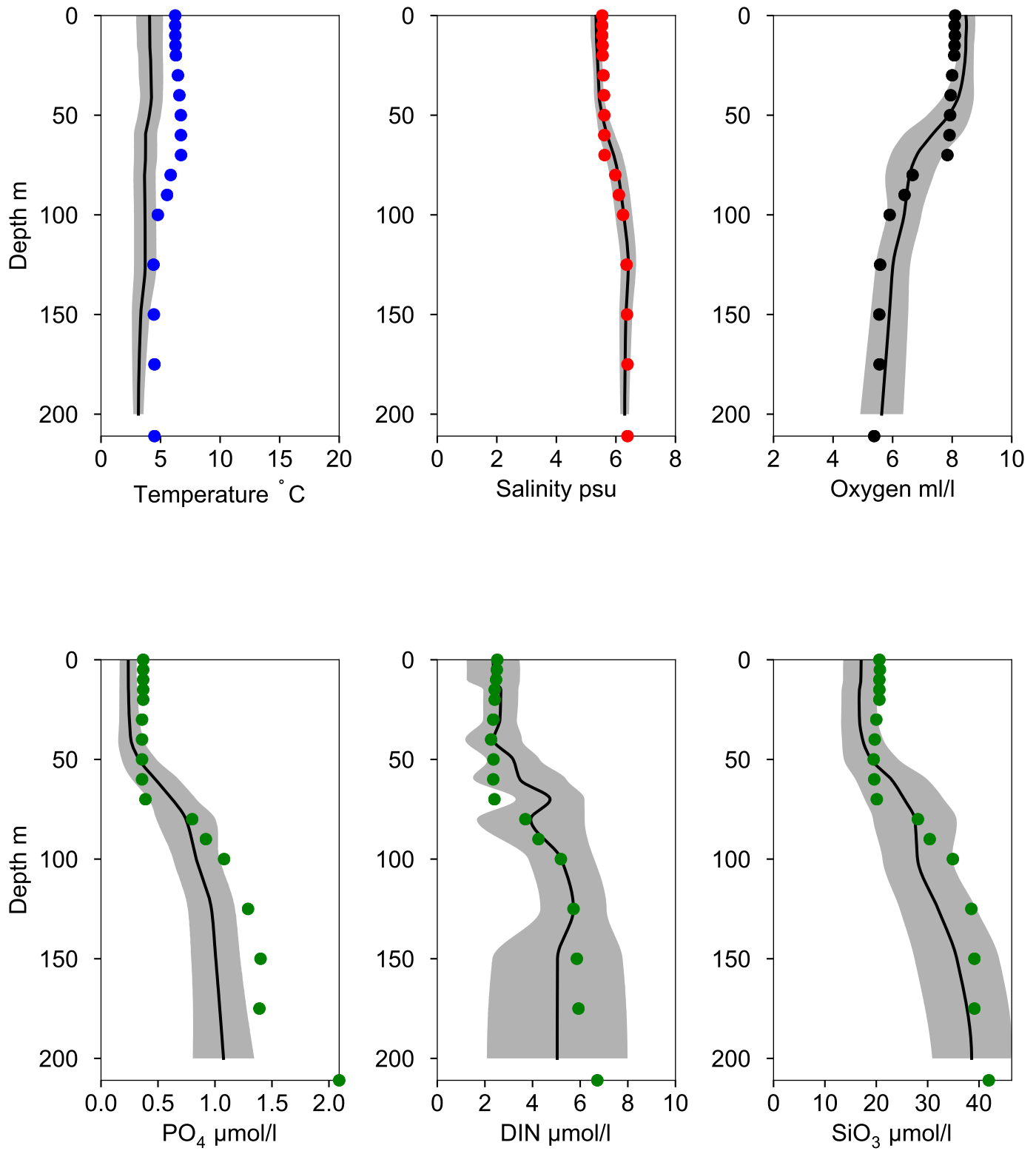


O₂ ml/l



Vertical profiles US5B / C1 December

— Mean 2001-2015 St.Dev. • 2020-12-06



STATION US7 SURFACE WATER (0-10 m)

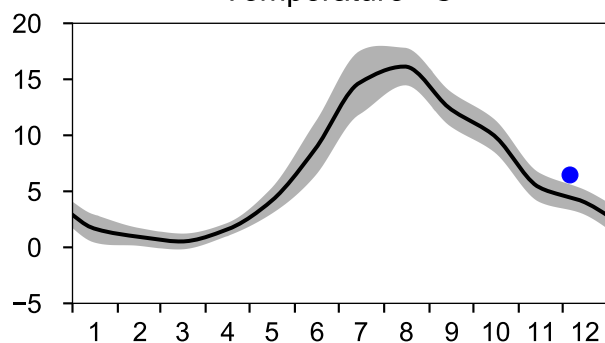
Annual Cycles

— Mean 2001-2015

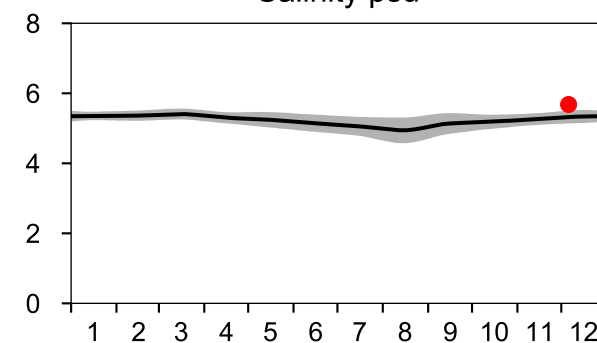
■ St.Dev.

● 2020

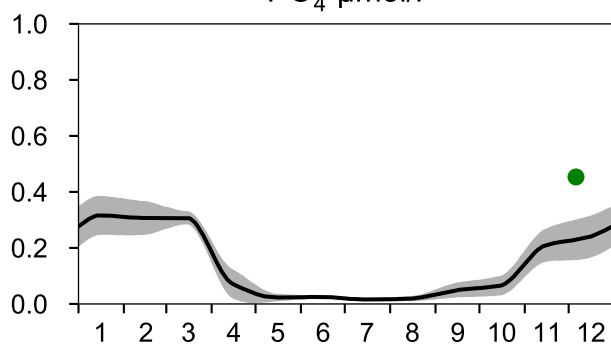
Temperature °C



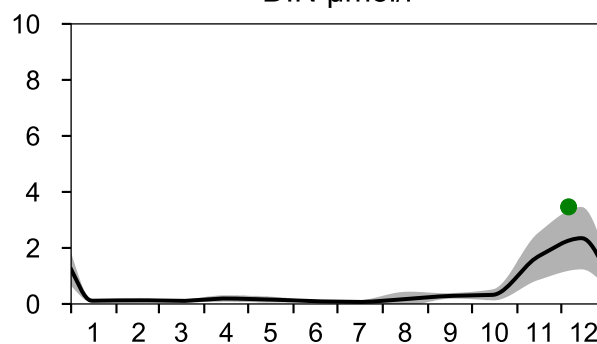
Salinity psu



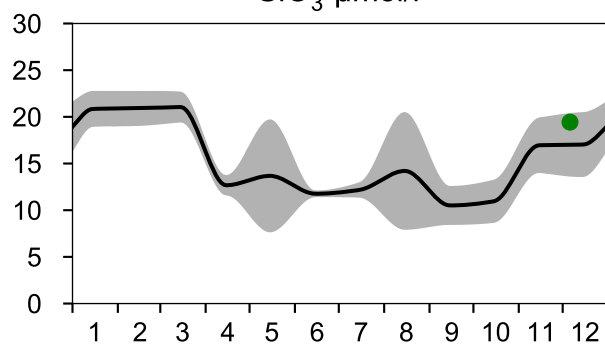
PO₄ µmol/l



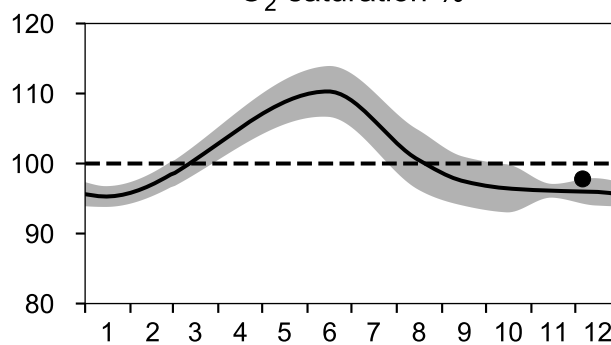
DIN µmol/l



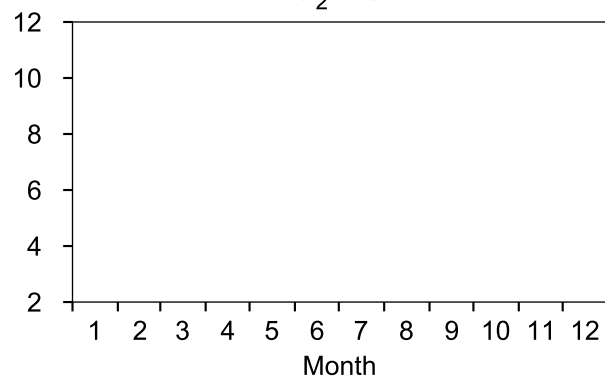
SiO₃ µmol/l



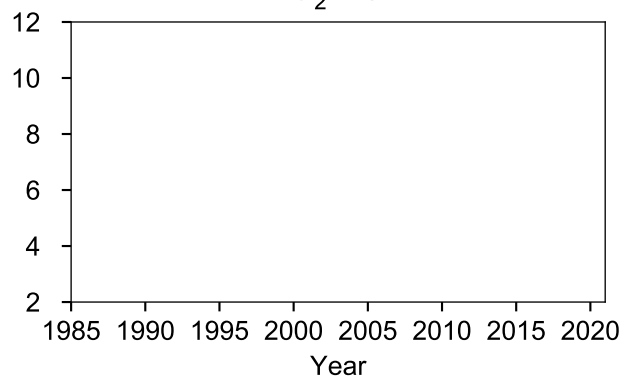
O₂ saturation %



O₂ ml/l

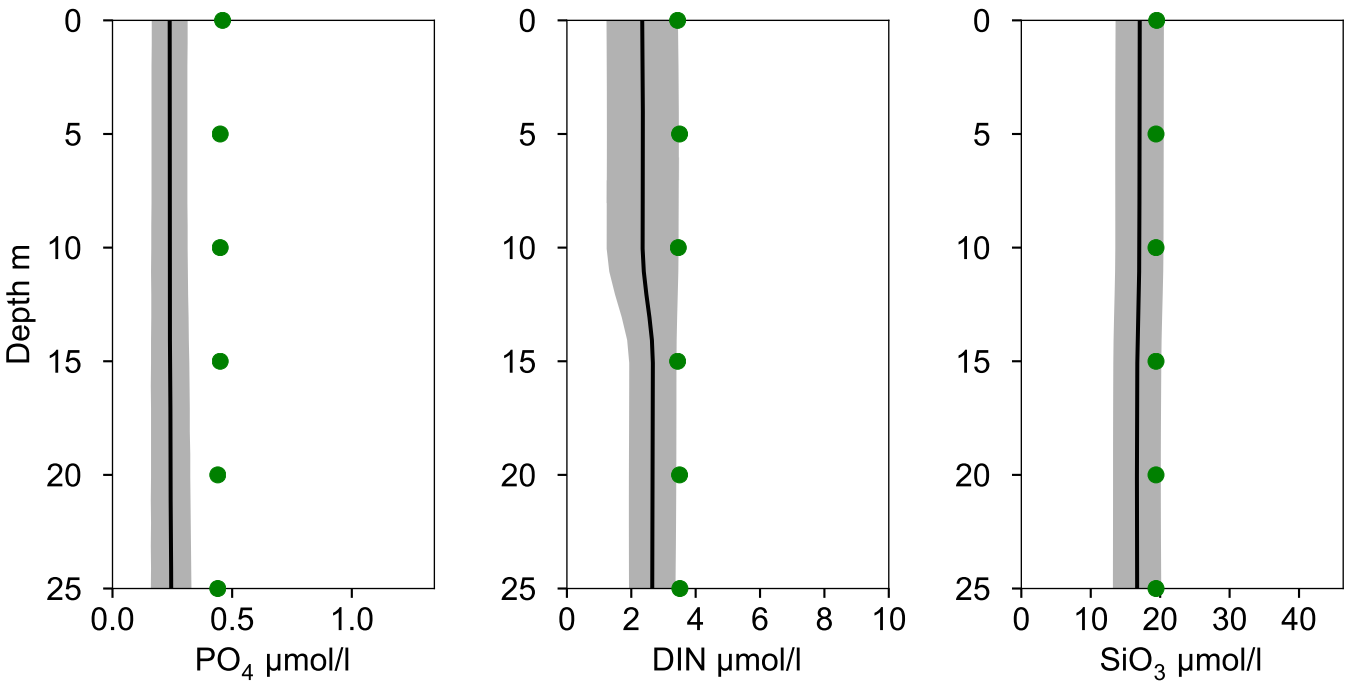
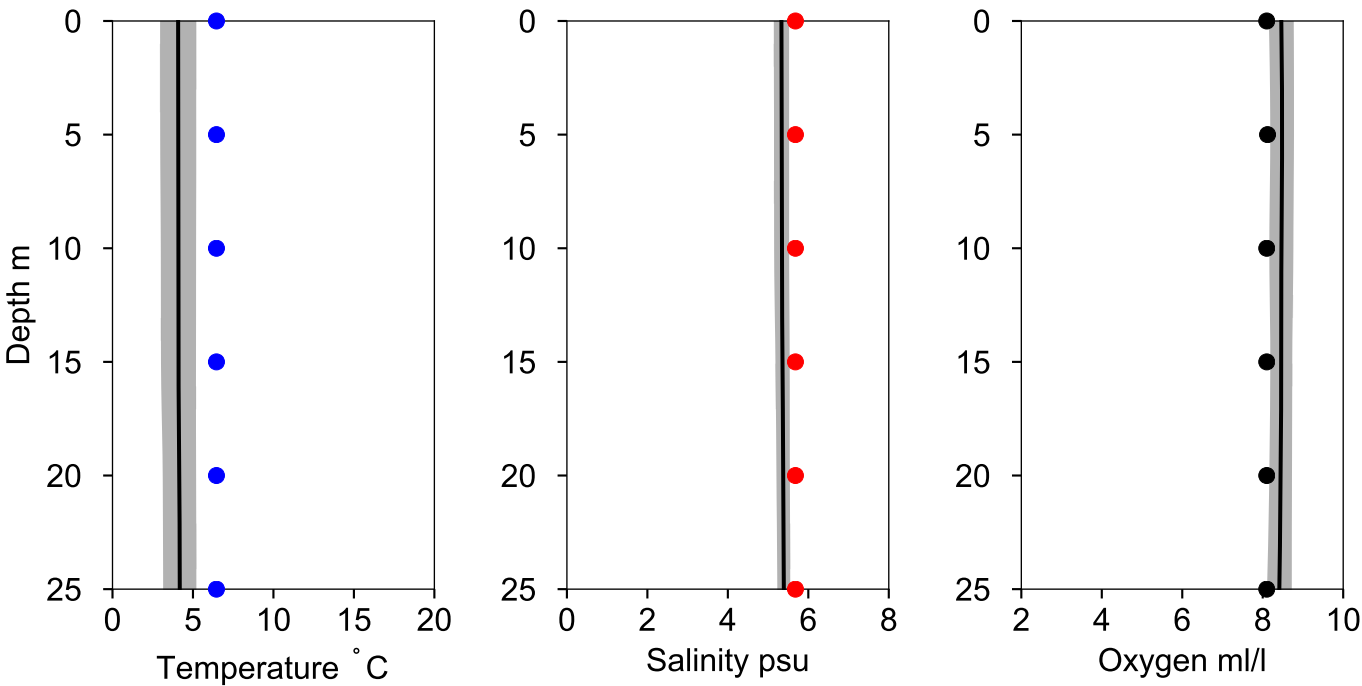


O₂ ml/l



Vertical profiles US7
December

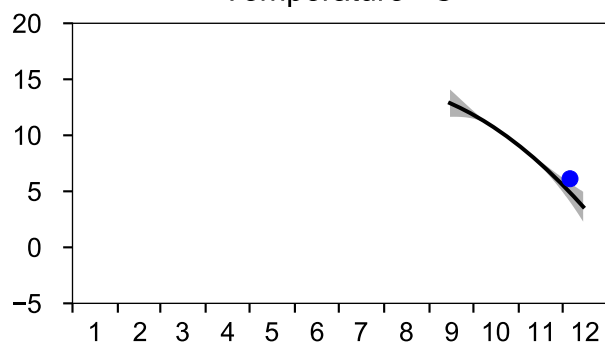
— Mean 2001-2015 St.Dev. • 2020-12-06



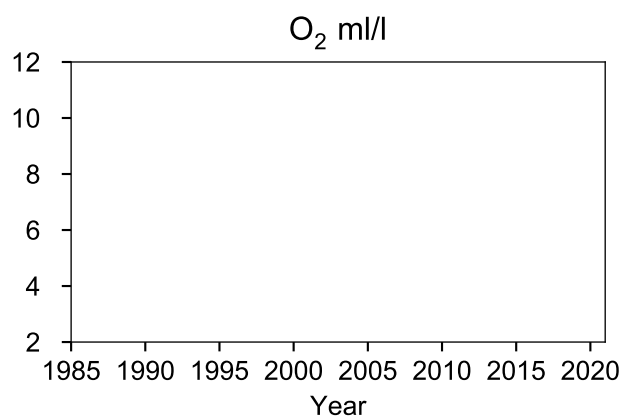
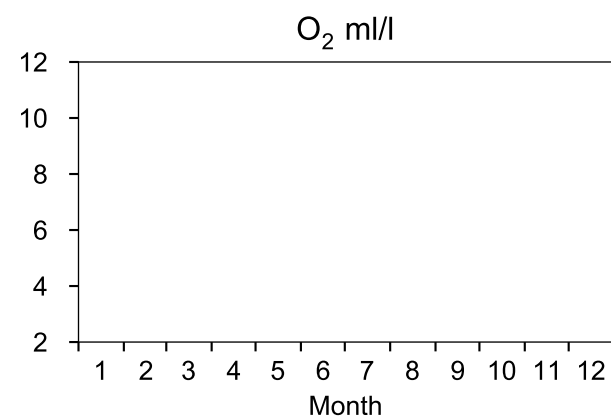
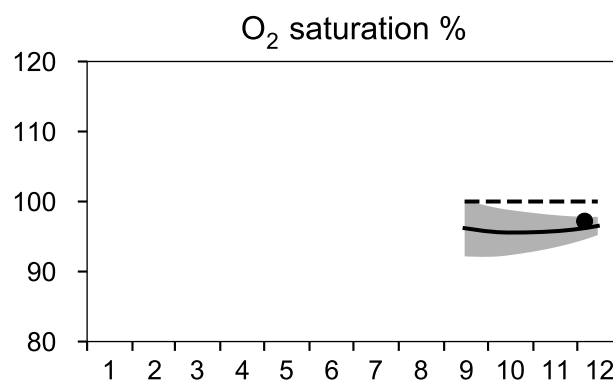
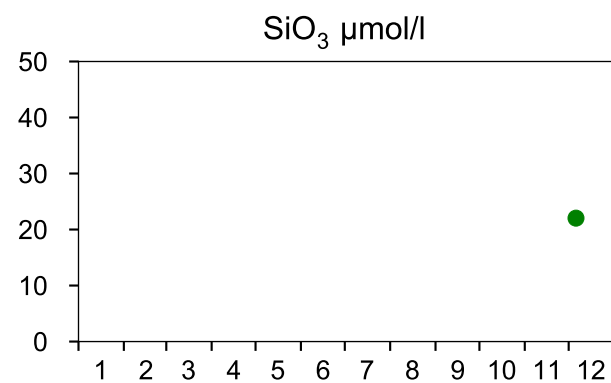
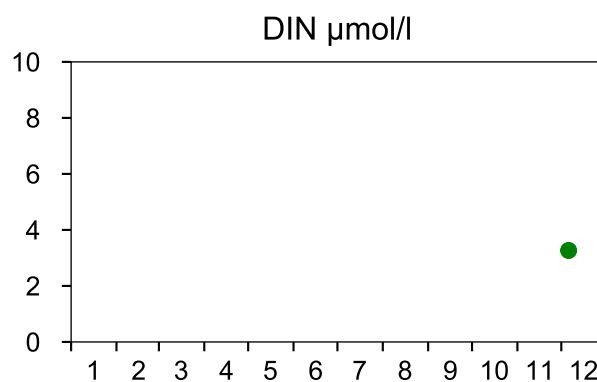
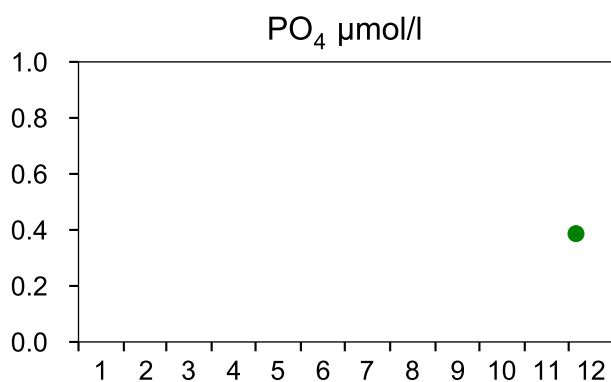
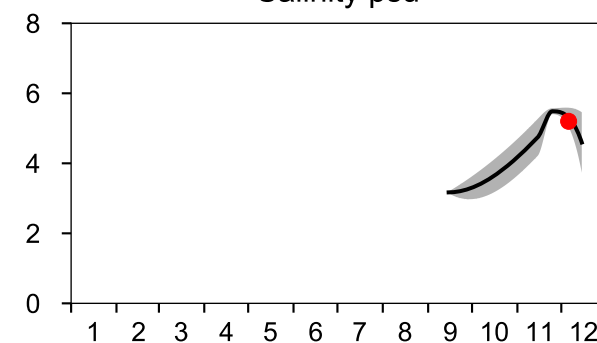
STATION F18 SYDOSTBROTEN SURFACE WATER (0-10 m)

Annual Cycles

— Mean 2001-2015
Temperature °C

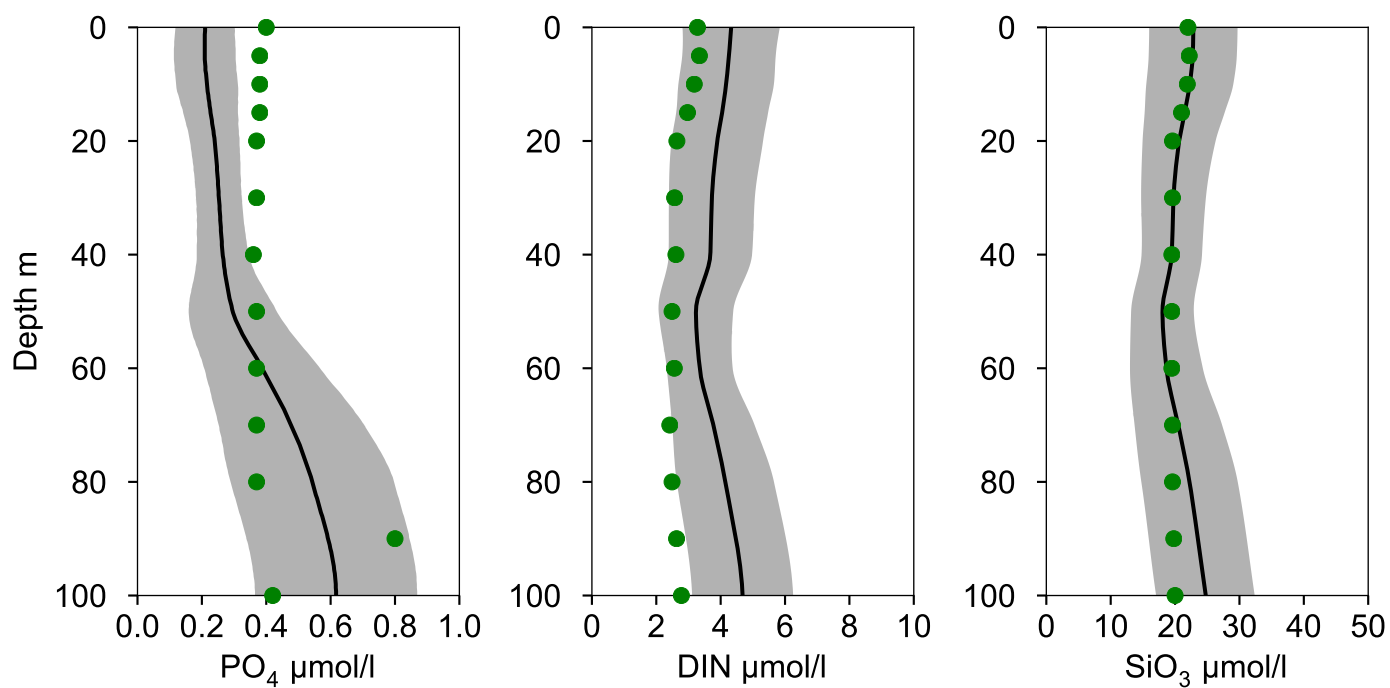
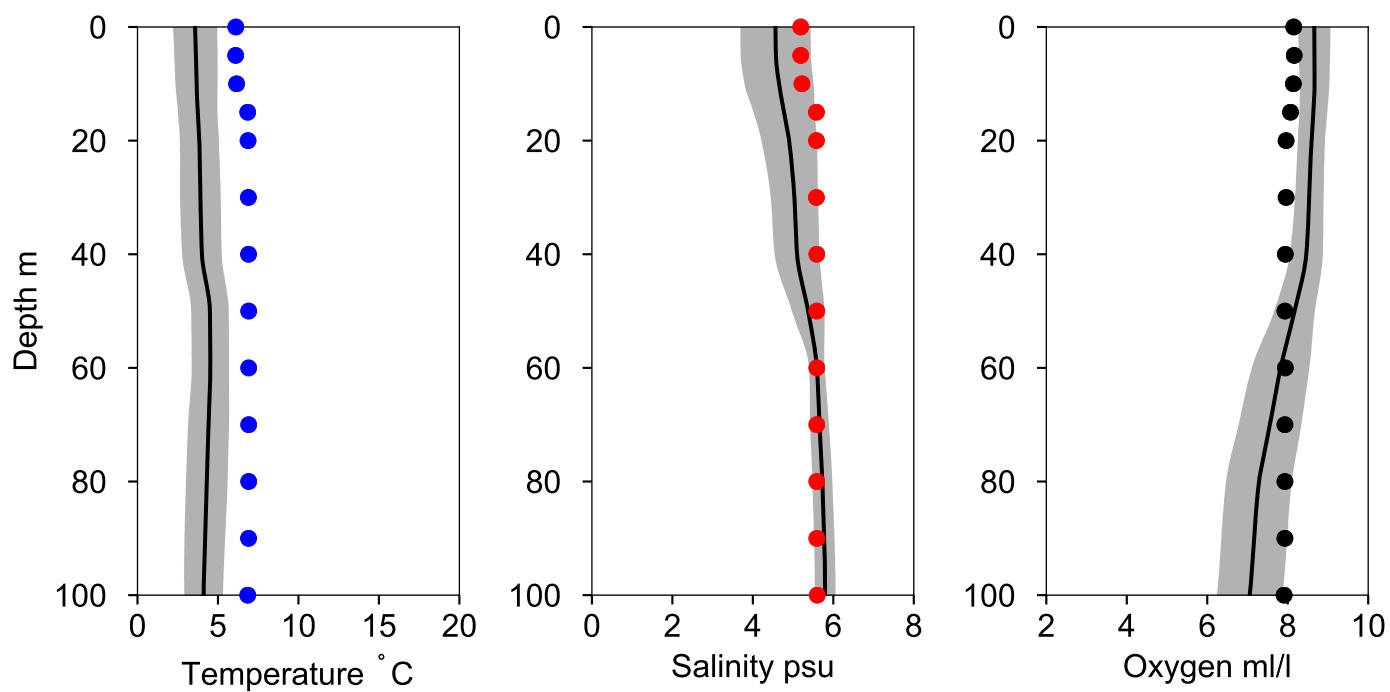


■ St.Dev. ● 2020
Salinity psu



Vertical profiles F18 SYDOSTBROTEN December

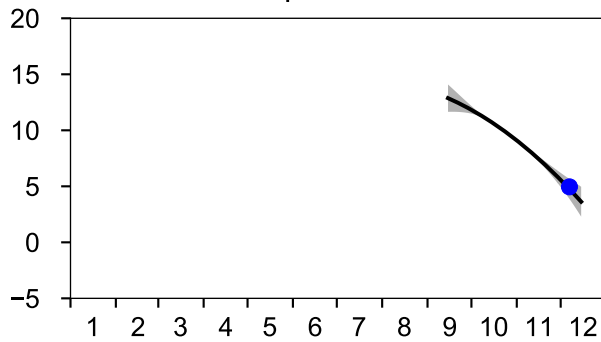
— Mean 2001-2015 St.Dev. • 2020-12-06



STATION F16 SURFACE WATER (0-10 m)

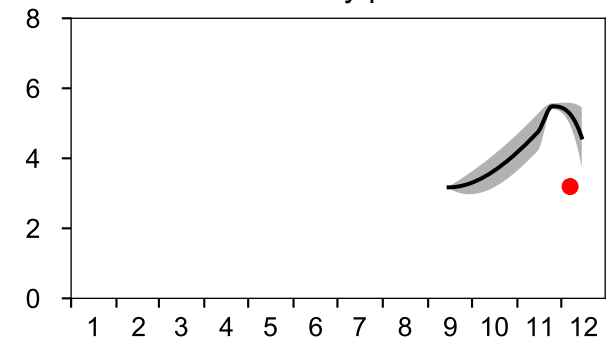
Annual Cycles

— Mean 2001-2015
Temperature °C

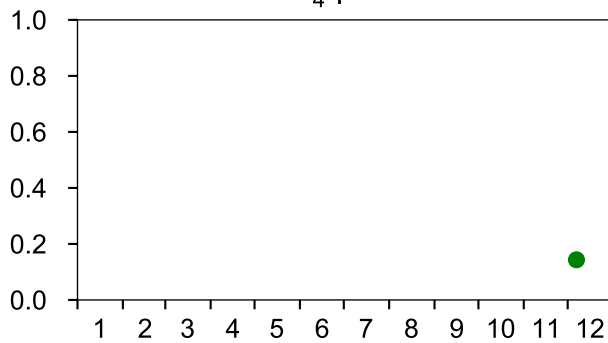


■ St.Dev.

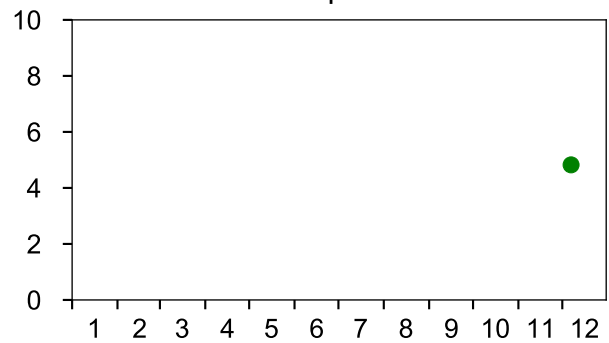
● 2020
Salinity psu



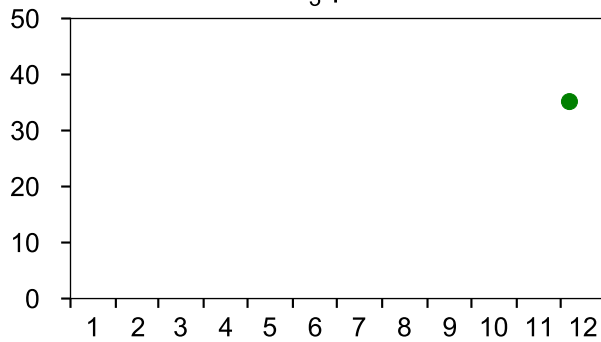
PO₄ μmol/l



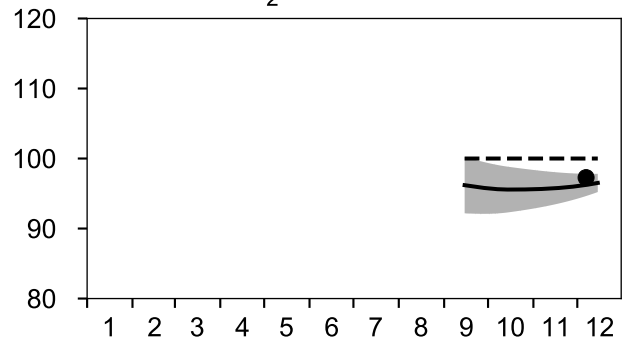
DIN μmol/l



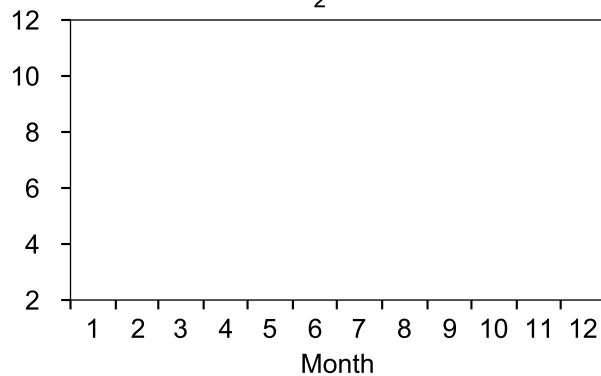
SiO₃ μmol/l



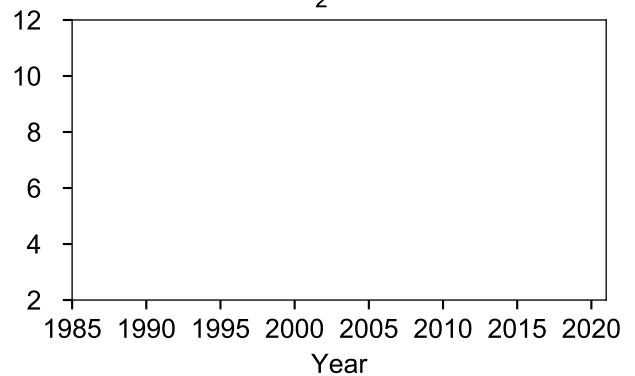
O₂ saturation %



O₂ ml/l

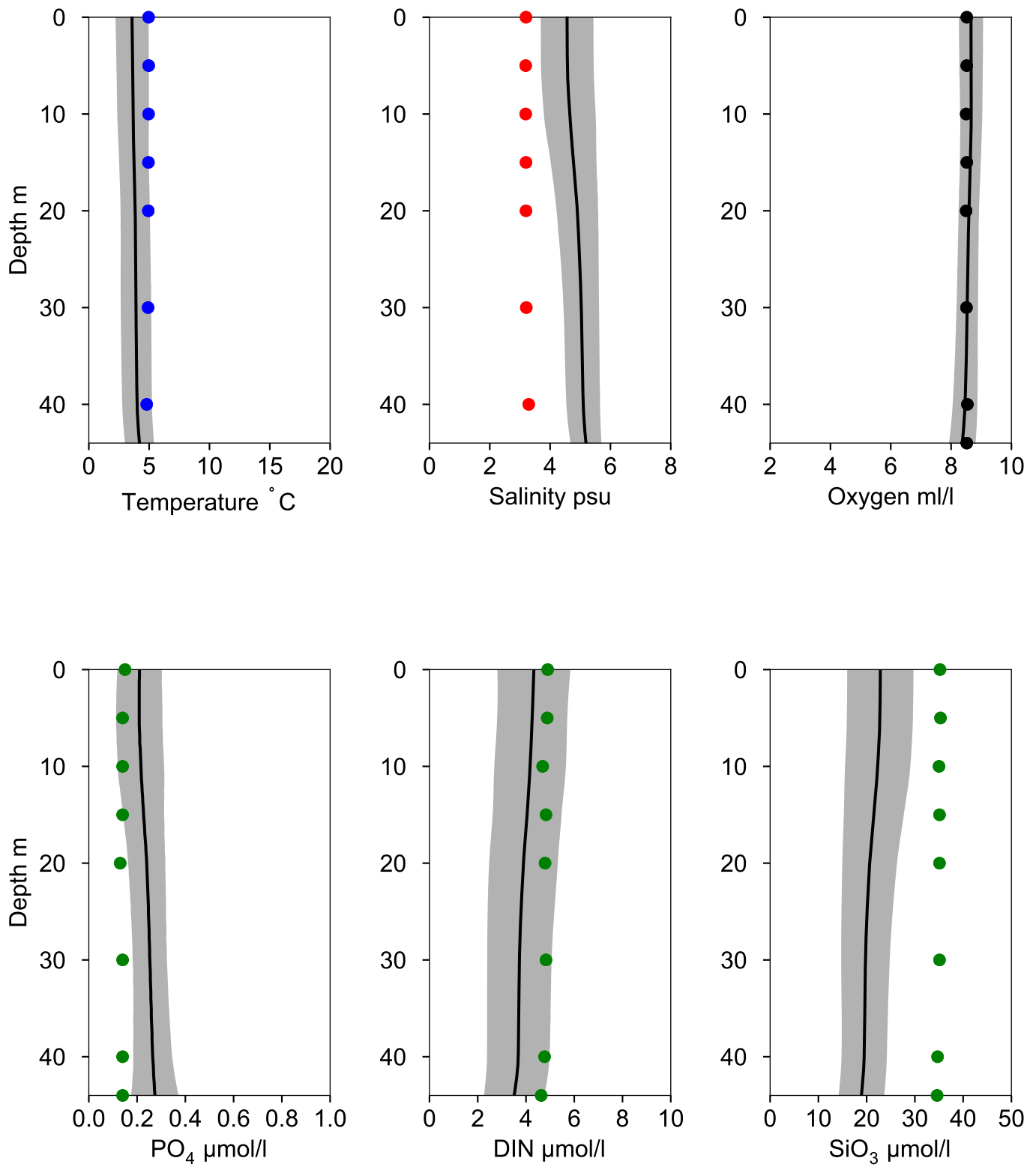


O₂ ml/l



Vertical profiles F16 December

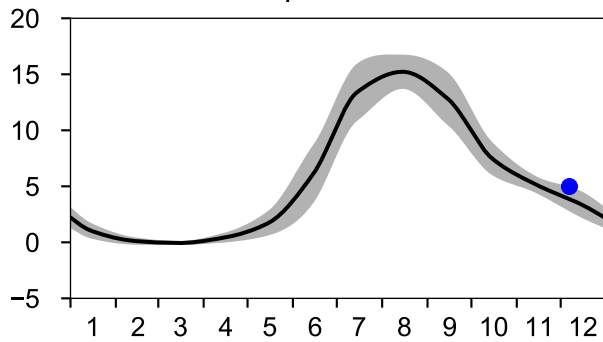
— Mean 2001-2015 St.Dev. • 2020-12-07



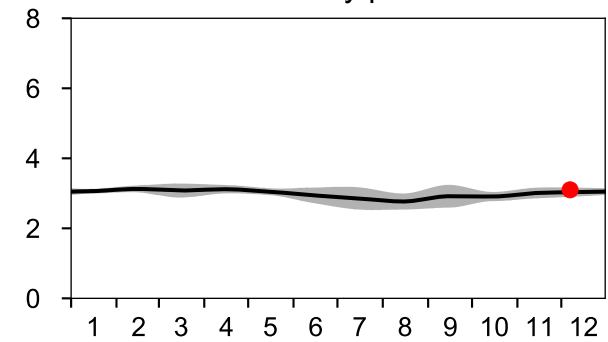
STATION F13/A19 SURFACE WATER (0-10 m)

Annual Cycles

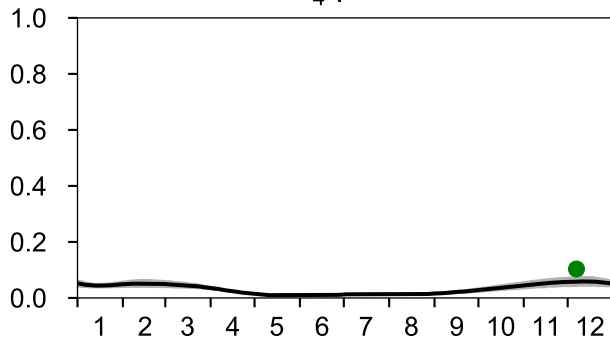
— Mean 2001-2015
Temperature °C



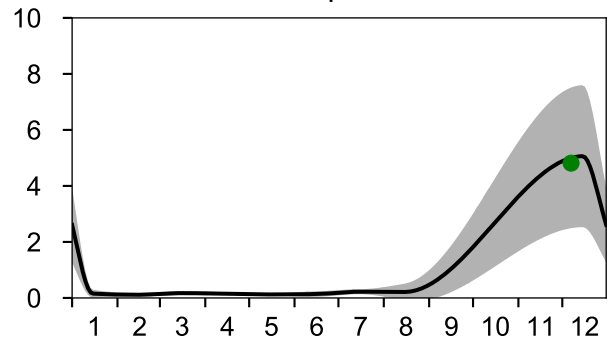
— St.Dev. ● 2020
Salinity psu



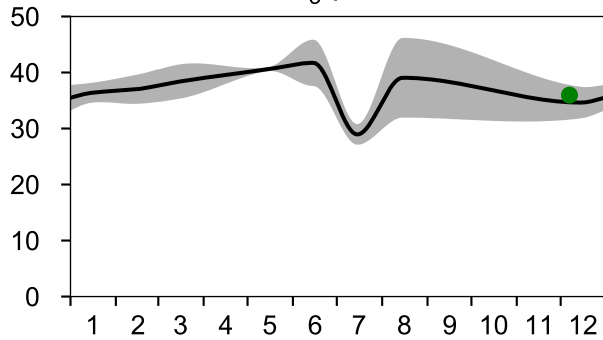
PO₄ µmol/l



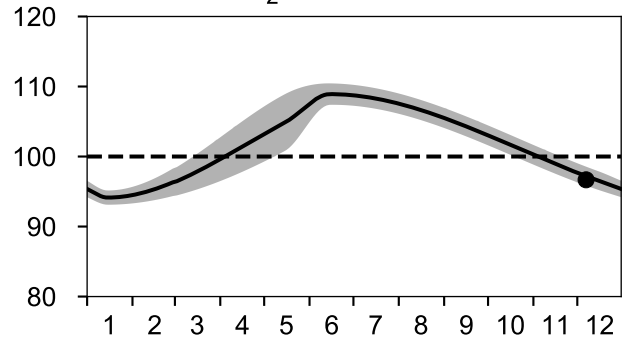
DIN µmol/l



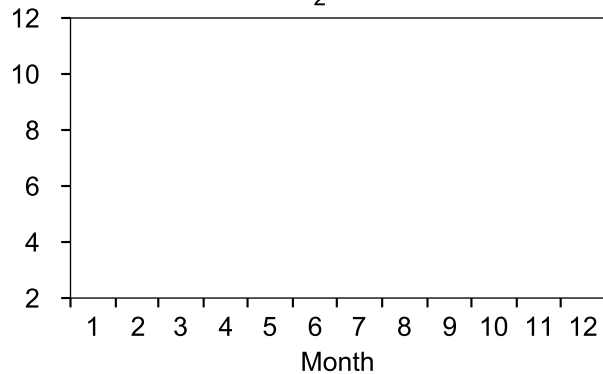
SiO₃ µmol/l



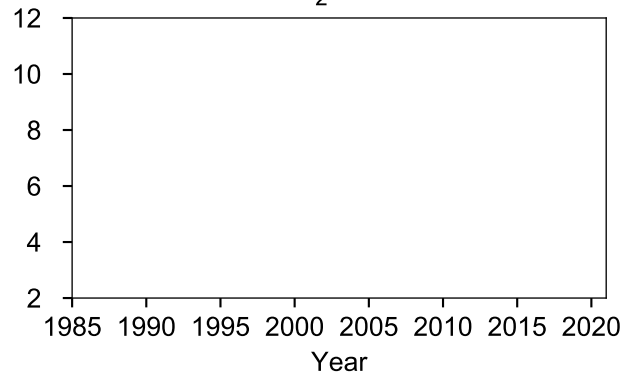
O₂ saturation %



O₂ ml/l

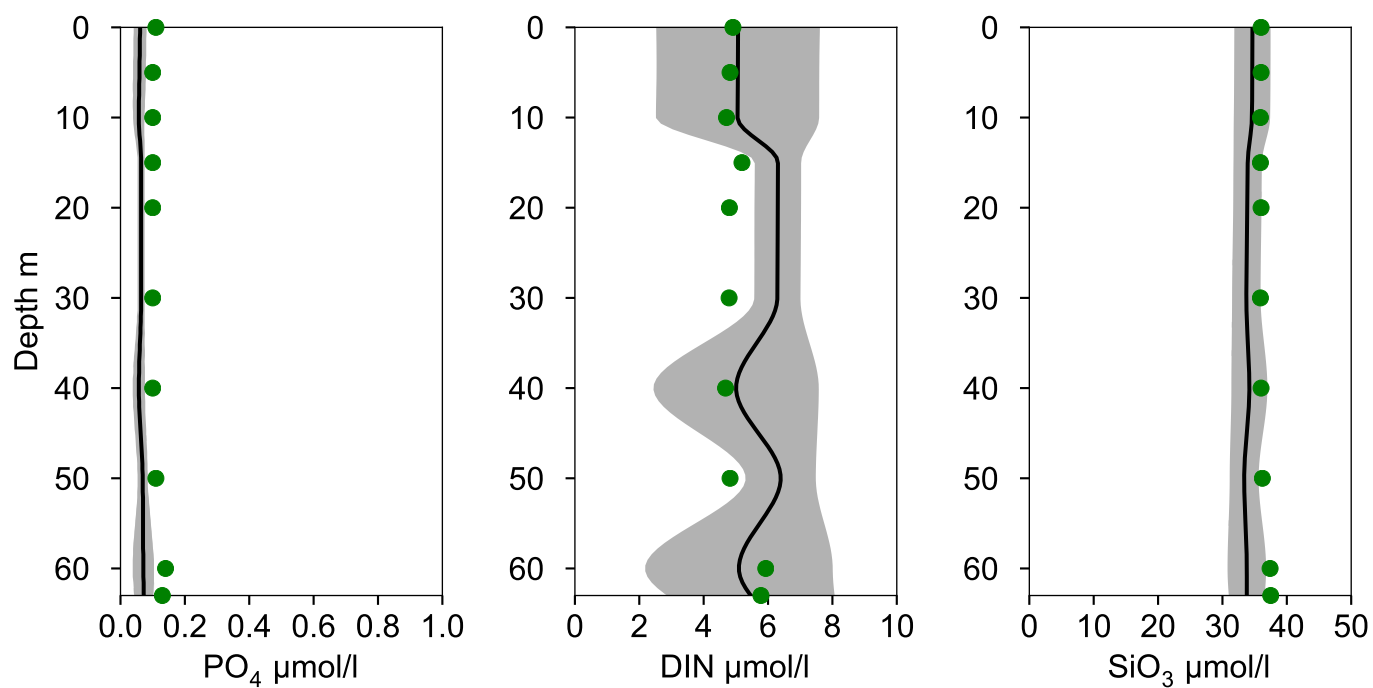
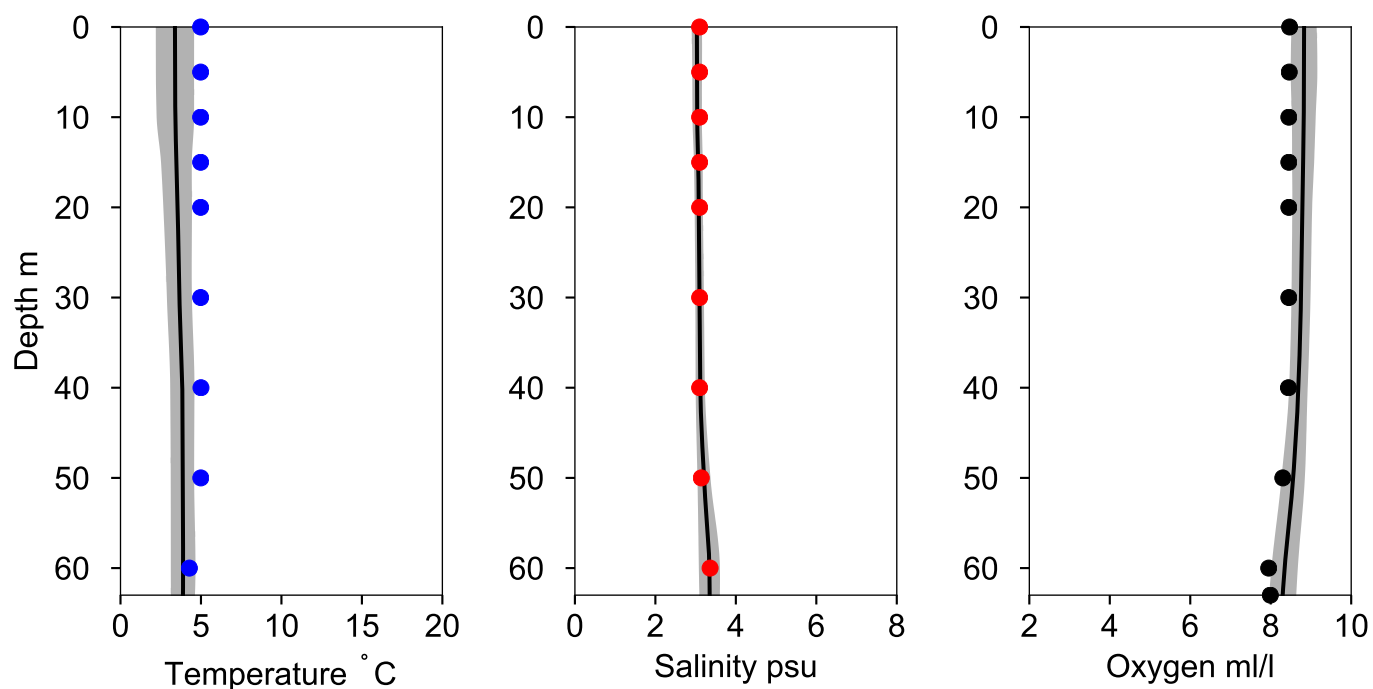


O₂ ml/l



Vertical profiles F13/A19 December

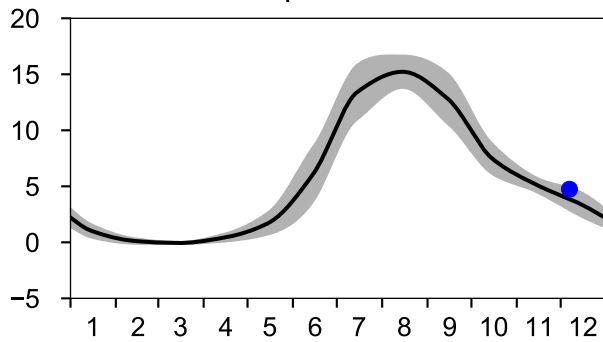
— Mean 2001-2015 St.Dev. • 2020-12-07



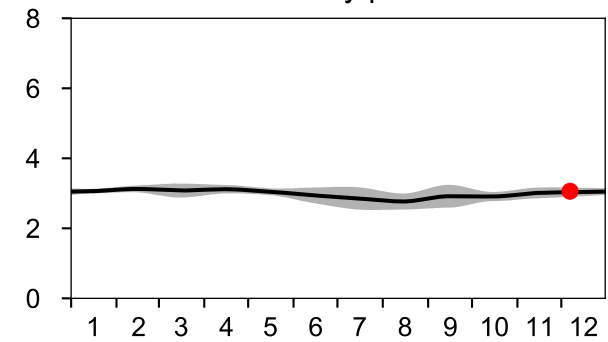
STATION BO3 / A3 SURFACE WATER (0-10 m)

Annual Cycles

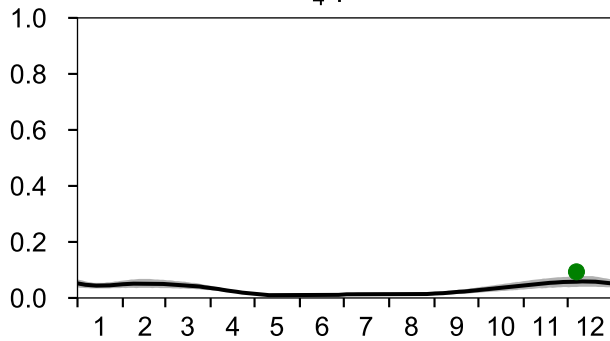
— Mean 2001-2015
Temperature °C



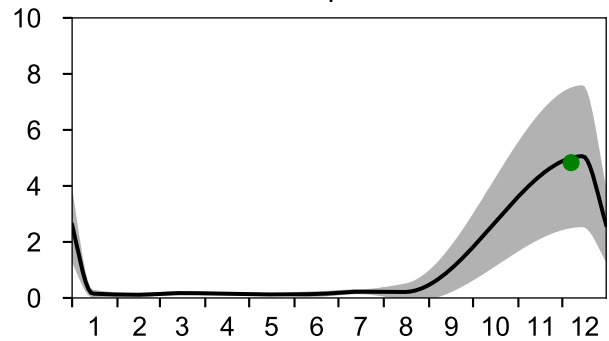
— St.Dev. ● 2020
Salinity psu



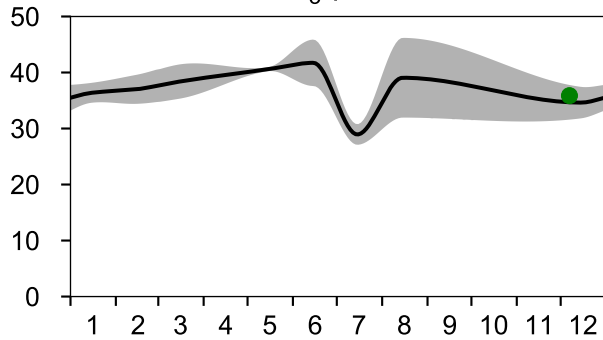
PO₄ μmol/l



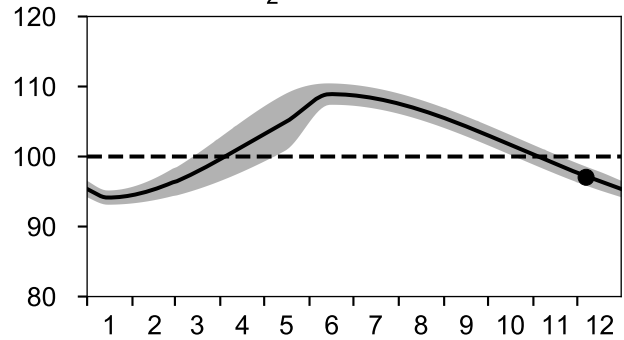
DIN μmol/l



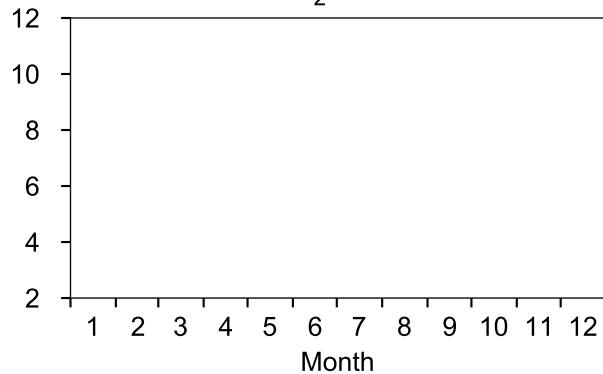
SiO₃ μmol/l



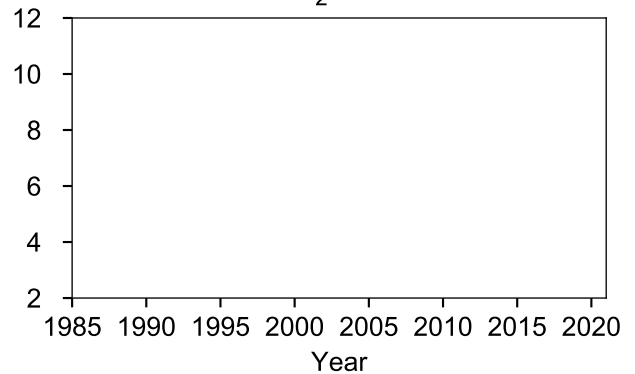
O₂ saturation %



O₂ ml/l

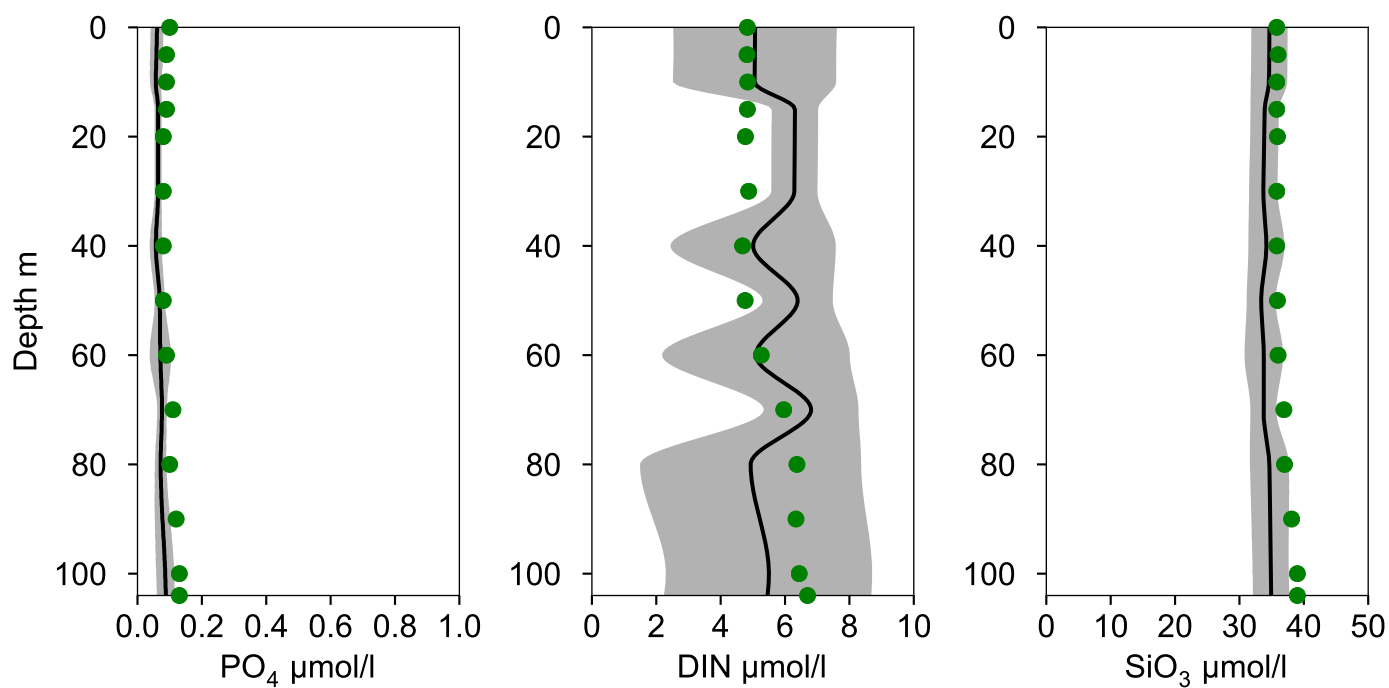
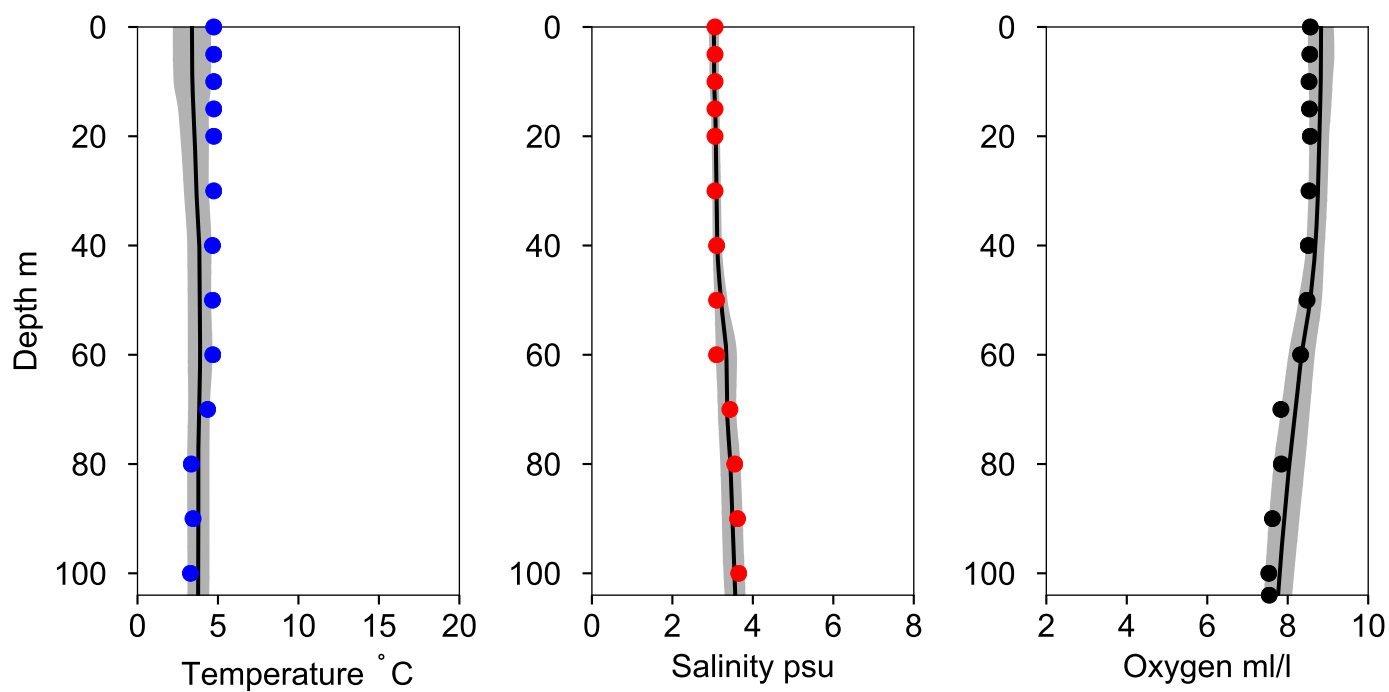


O₂ ml/l



Vertical profiles BO3 / A3 December

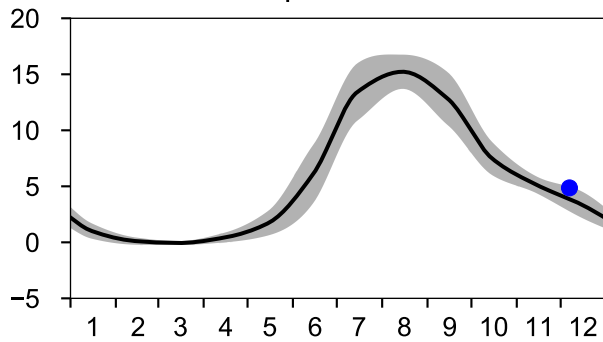
— Mean 2001-2015 St.Dev. • 2020-12-07



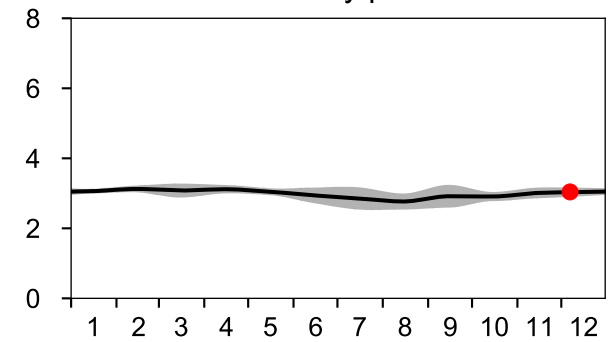
STATION RR7 SURFACE WATER (0-10 m)

Annual Cycles

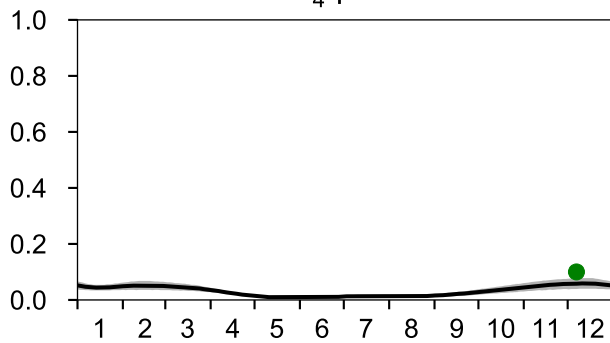
— Mean 2001-2015
Temperature °C



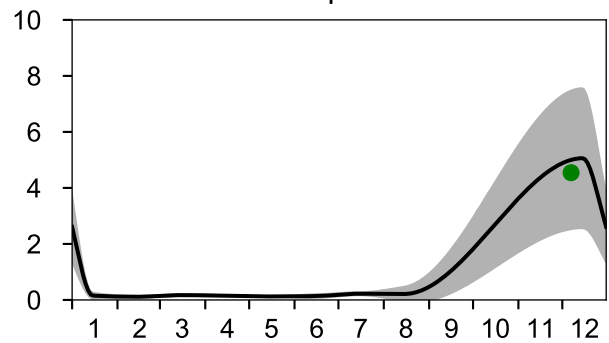
■ St.Dev. ● 2020
Salinity psu



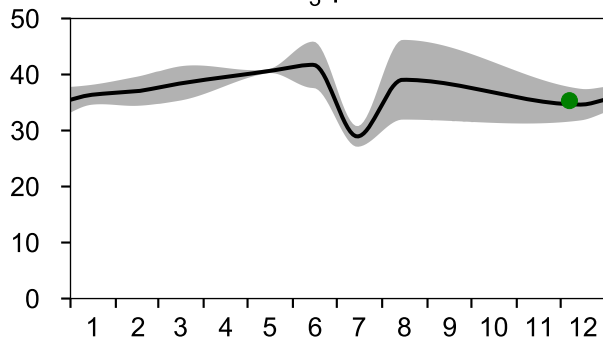
PO₄ µmol/l



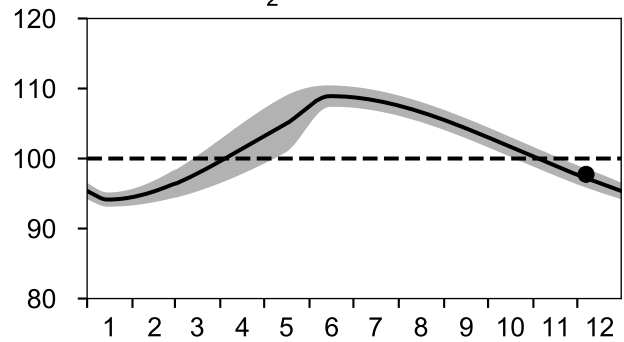
DIN µmol/l



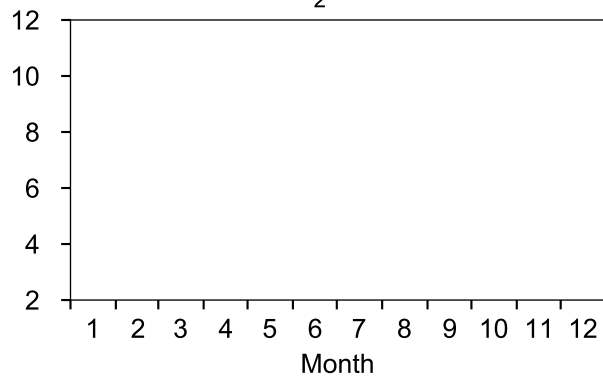
SiO₃ µmol/l



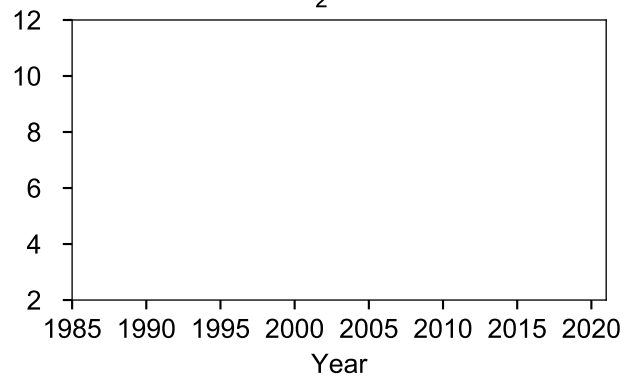
O₂ saturation %



O₂ ml/l

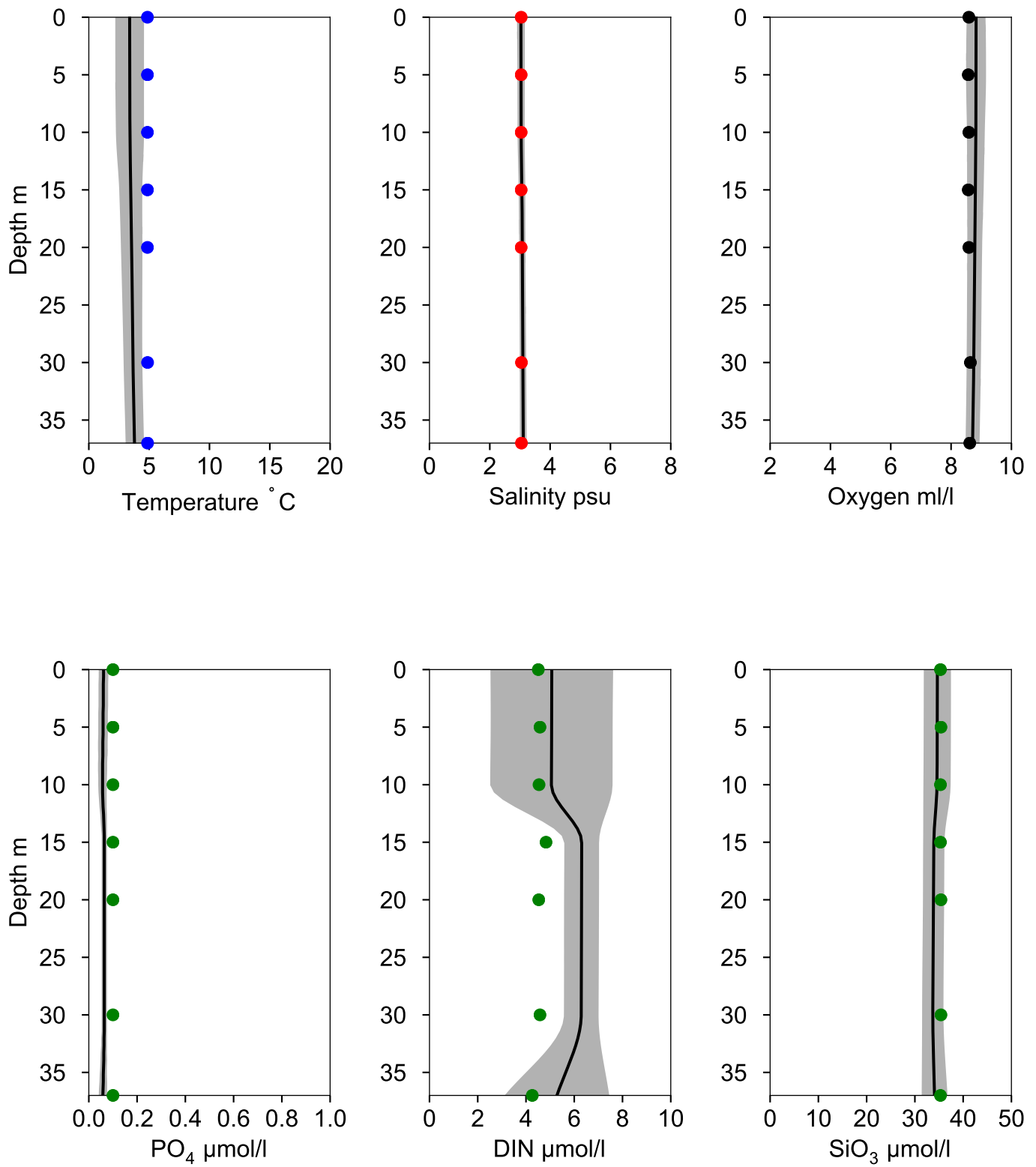


O₂ ml/l



Vertical profiles RR7 December

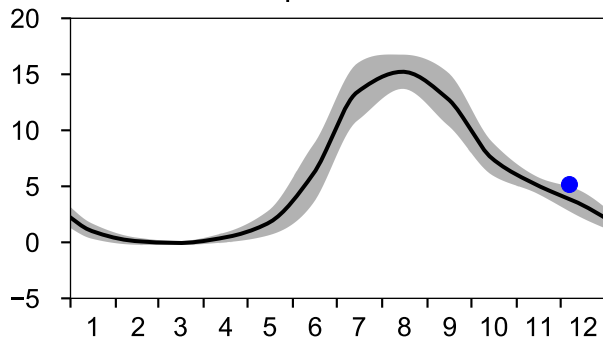
— Mean 2001-2015 St.Dev. • 2020-12-07



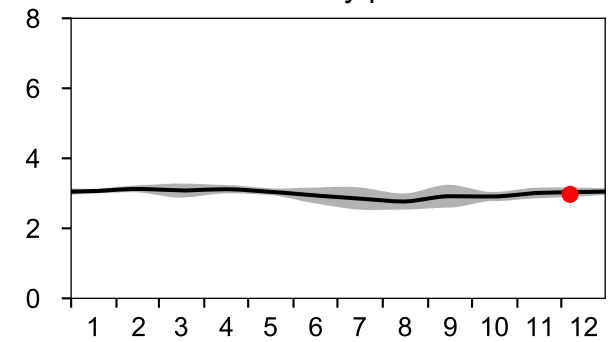
STATION RR5 SURFACE WATER (0-10 m)

Annual Cycles

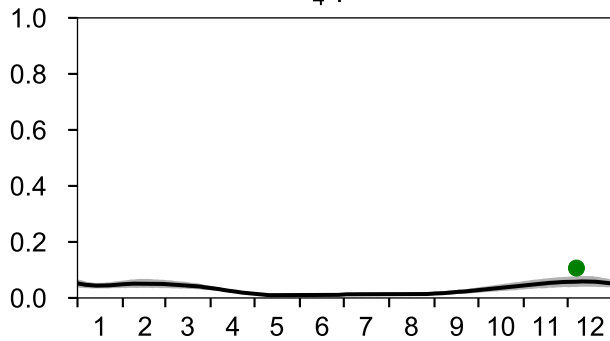
— Mean 2001-2015
Temperature °C



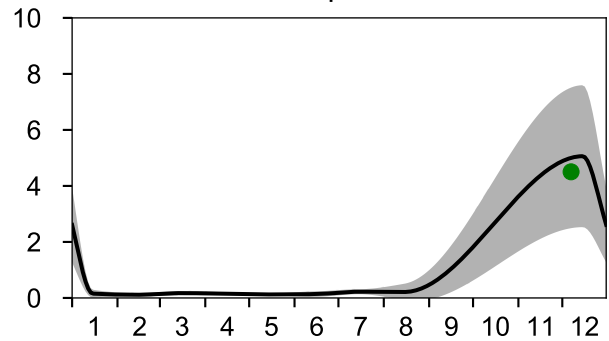
■ St.Dev. ● 2020
Salinity psu



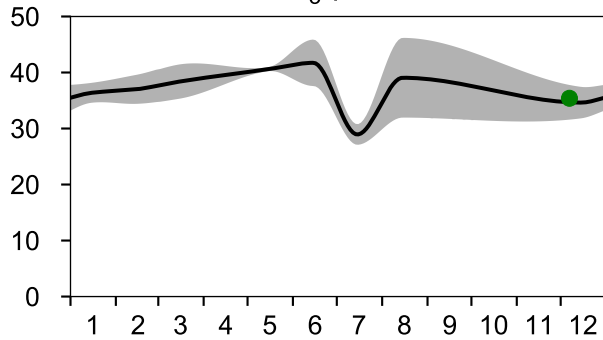
PO₄ µmol/l



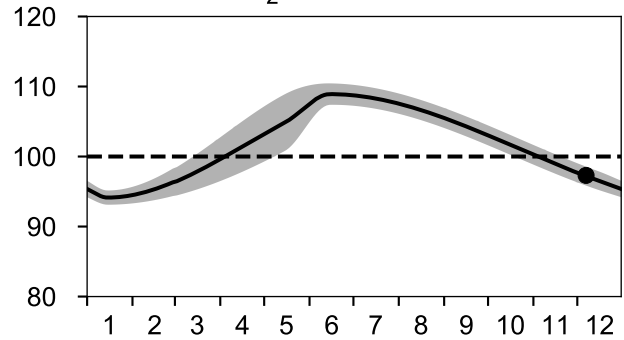
DIN µmol/l



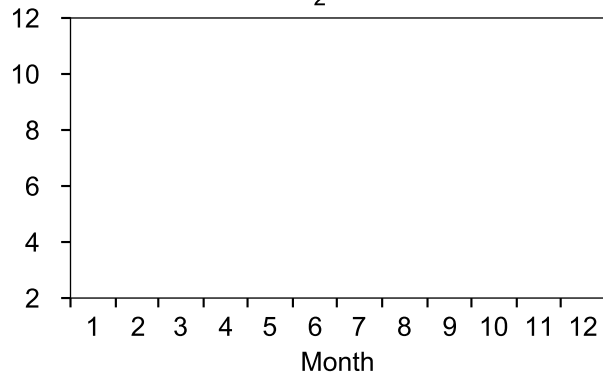
SiO₃ µmol/l



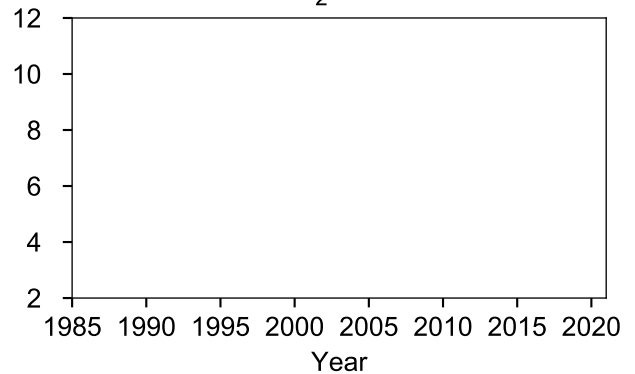
O₂ saturation %



O₂ ml/l

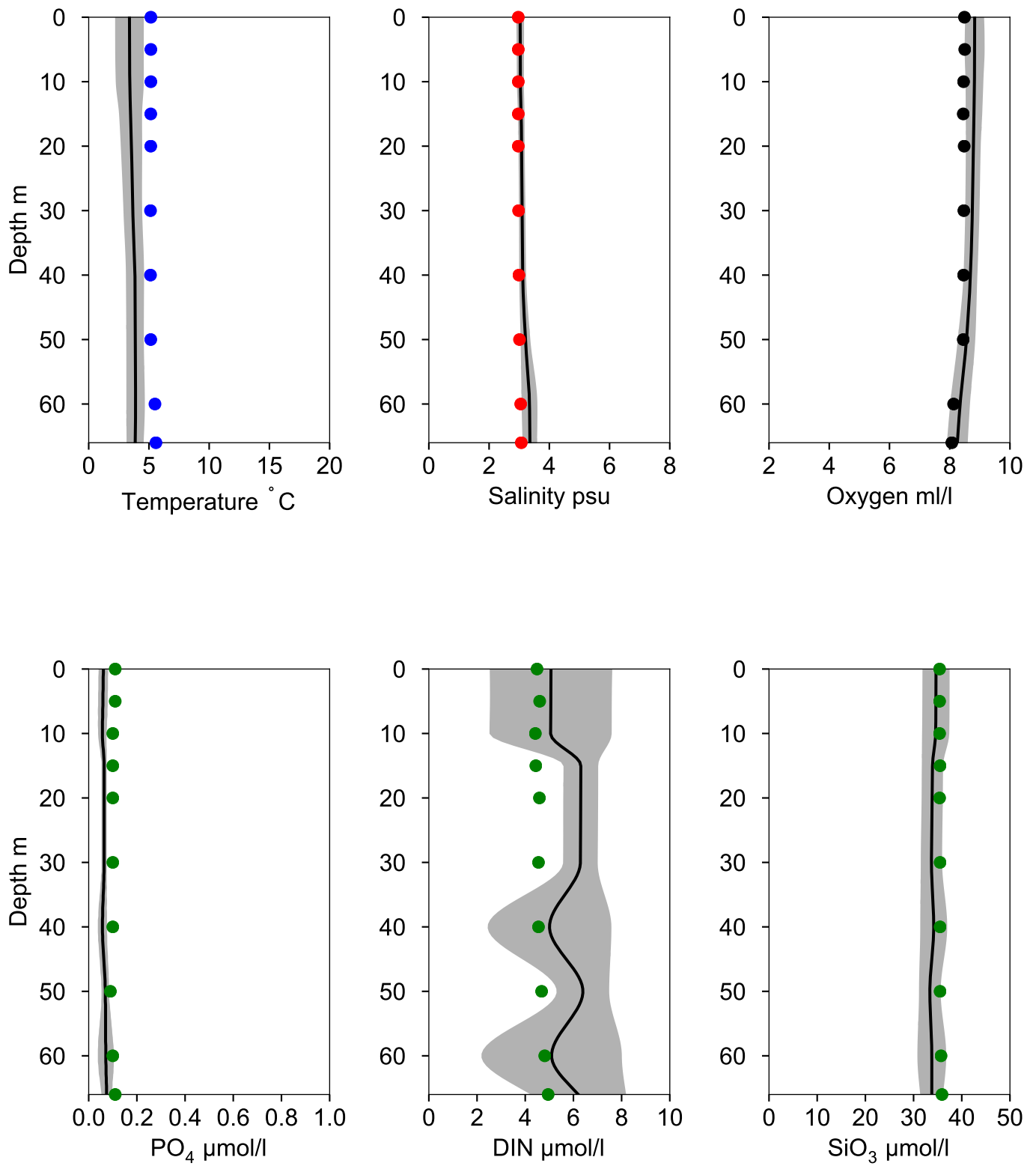


O₂ ml/l



Vertical profiles RR5 December

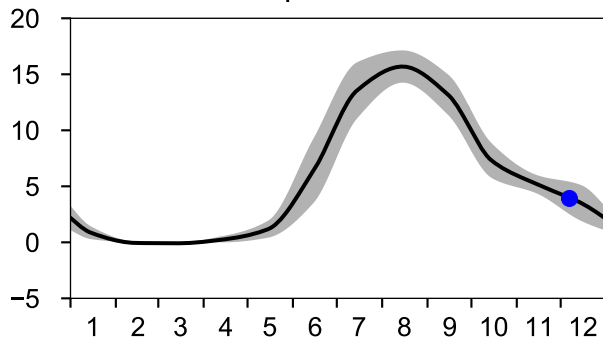
— Mean 2001-2015 St.Dev. • 2020-12-07



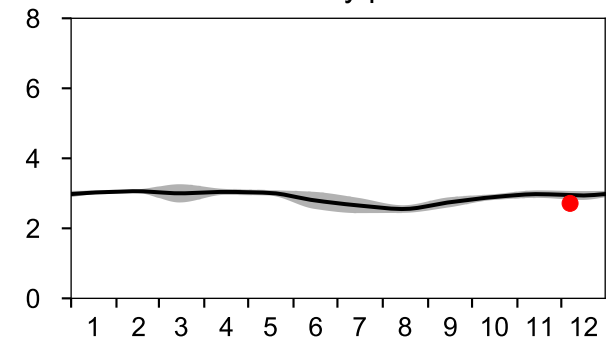
STATION F3 / A5 SURFACE WATER (0-10 m)

Annual Cycles

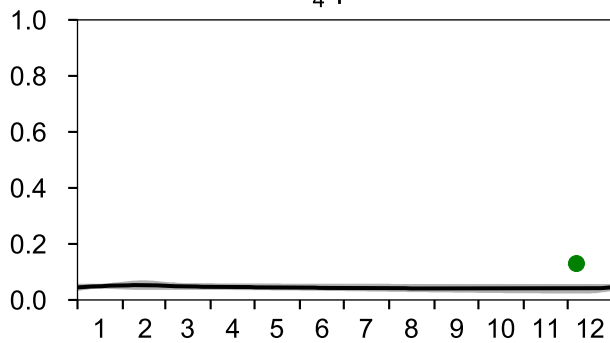
— Mean 2001-2015
Temperature °C



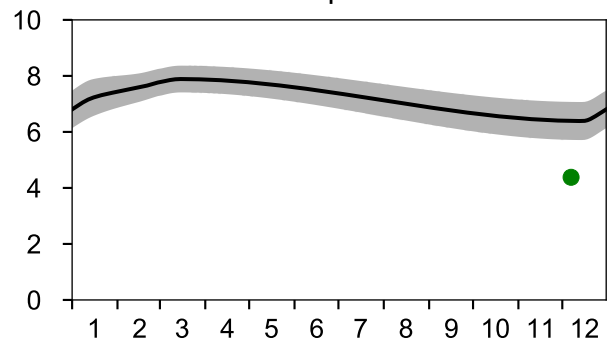
■ St.Dev. ● 2020
Salinity psu



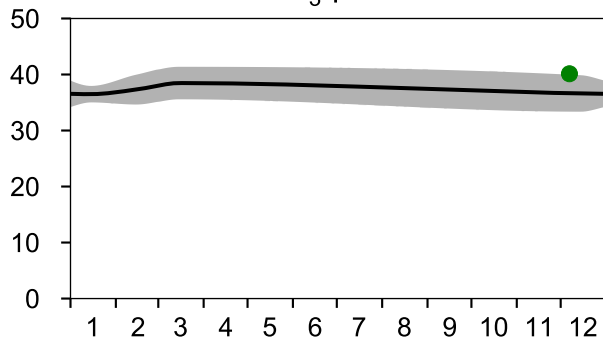
PO₄ µmol/l



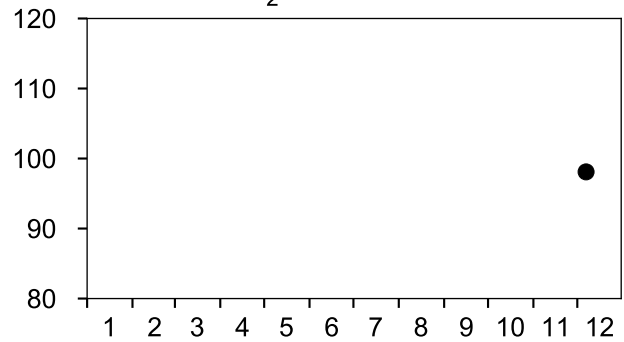
DIN µmol/l



SiO₃ µmol/l

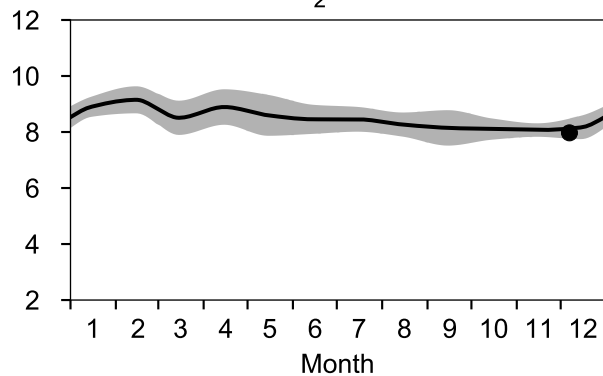


O₂ saturation %

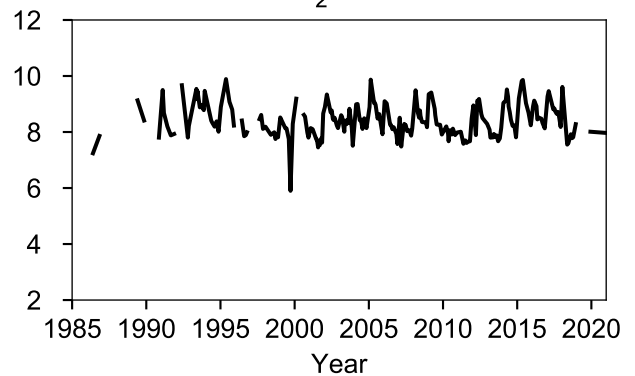


OXYGEN IN BOTTOM WATER (depth >= 80 m)

O₂ ml/l

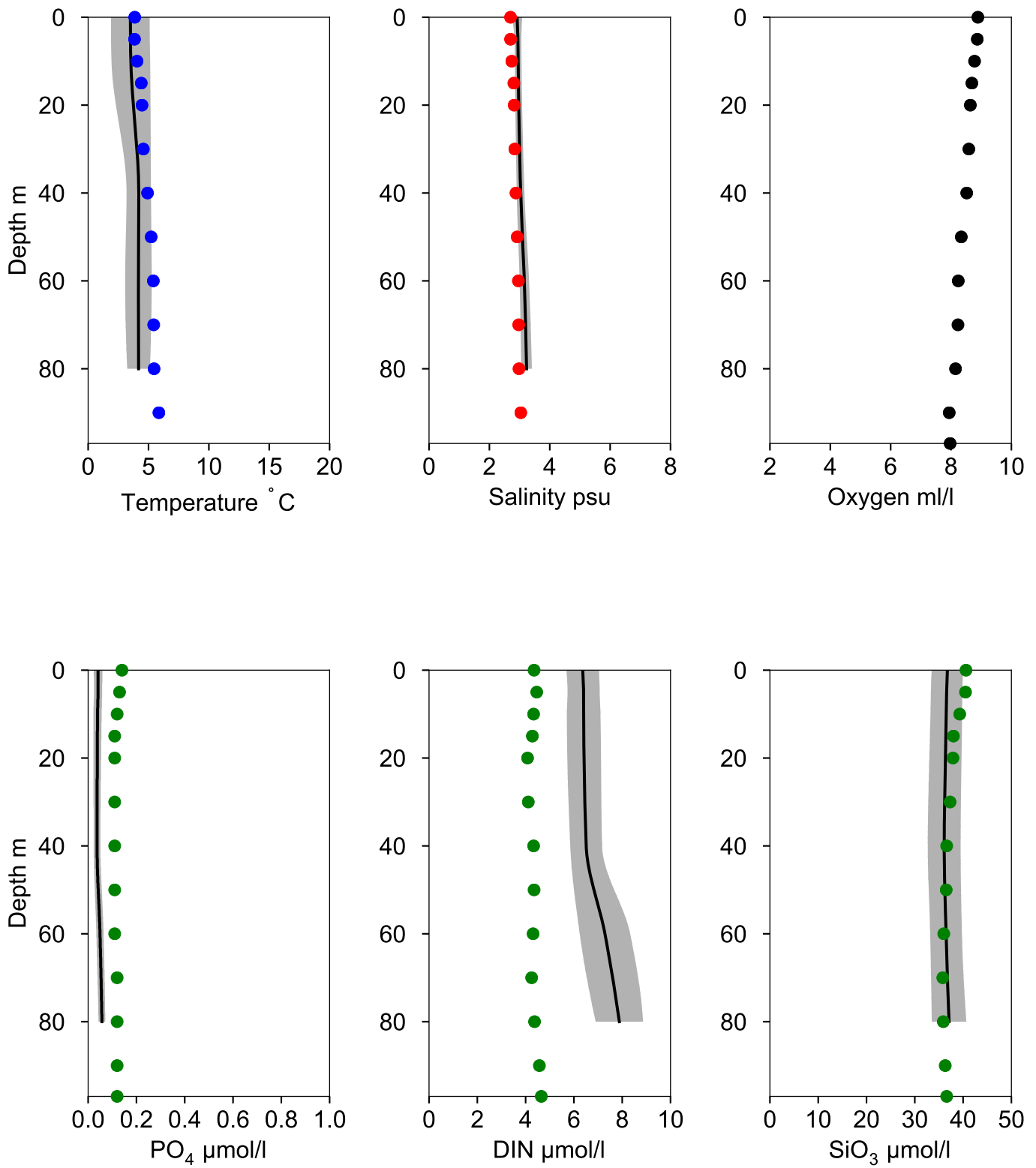


O₂ ml/l



Vertical profiles F3 / A5 December

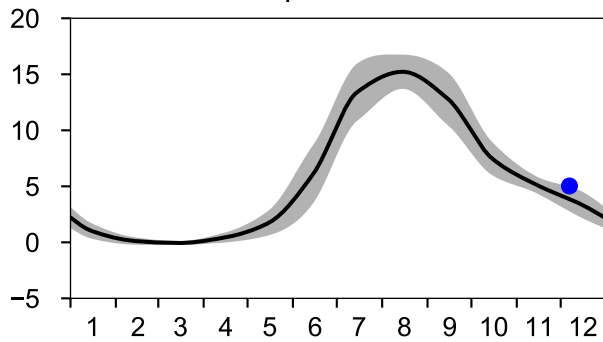
— Mean 2001-2015 St.Dev. • 2020-12-07



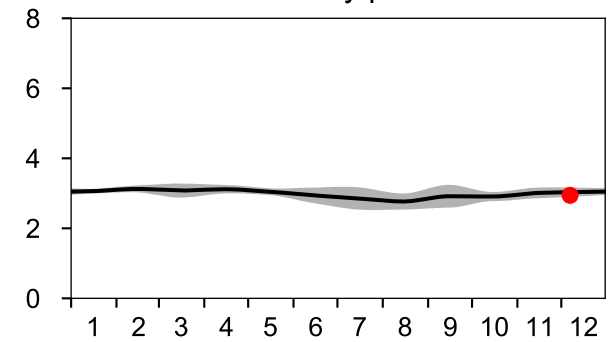
STATION RR1/A8 SURFACE WATER (0-10 m)

Annual Cycles

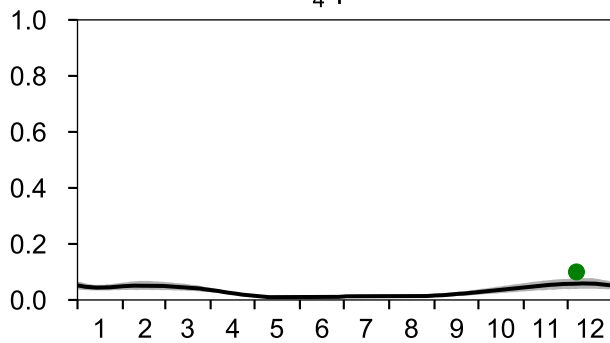
— Mean 2001-2015
Temperature °C



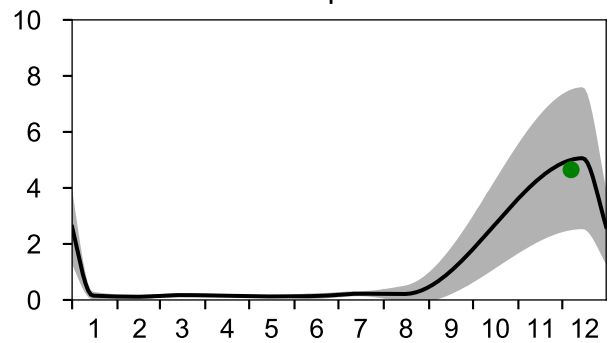
St.Dev. ● 2020
Salinity psu



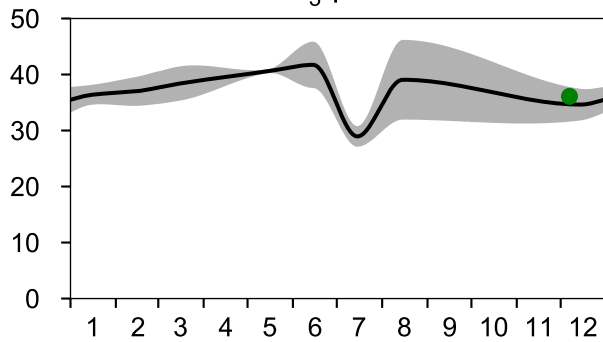
PO₄ μmol/l



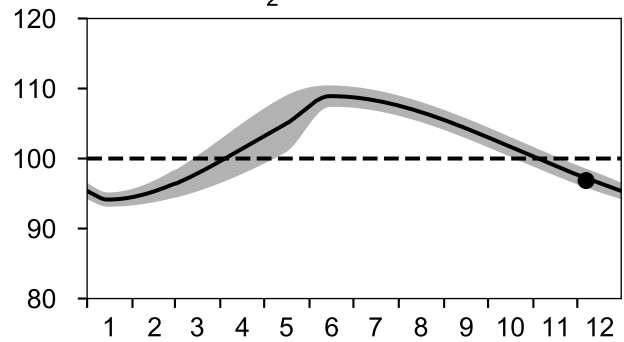
DIN μmol/l



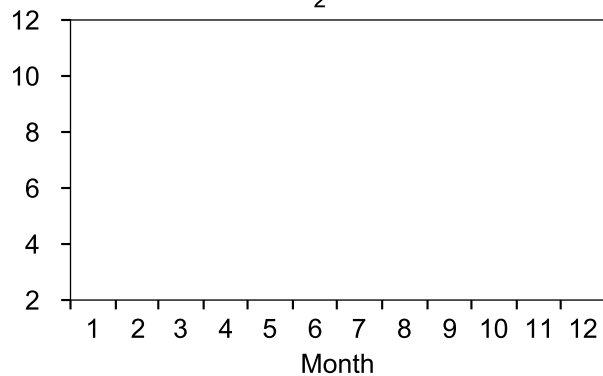
SiO₃ μmol/l



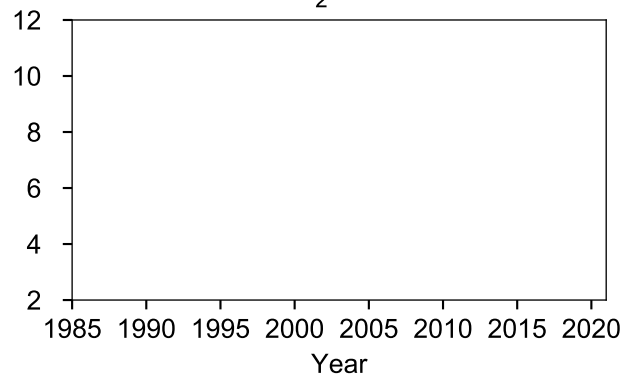
O₂ saturation %



O₂ ml/l

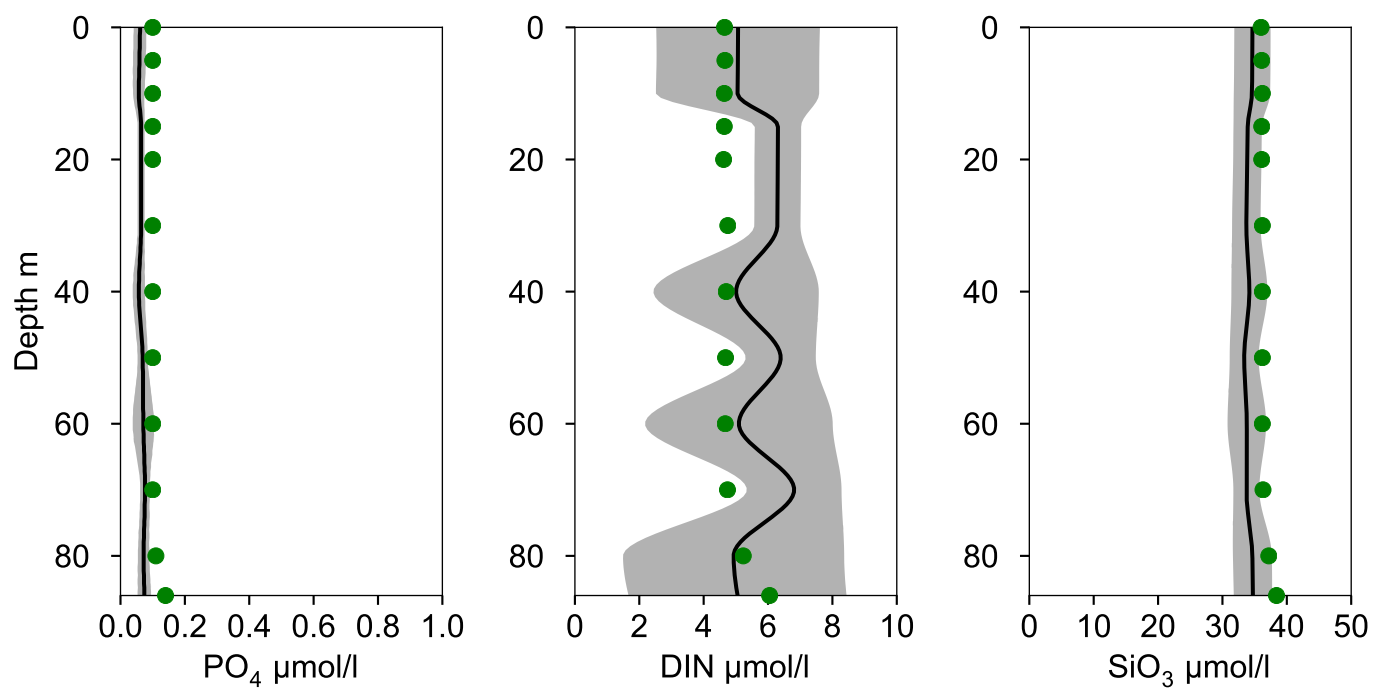
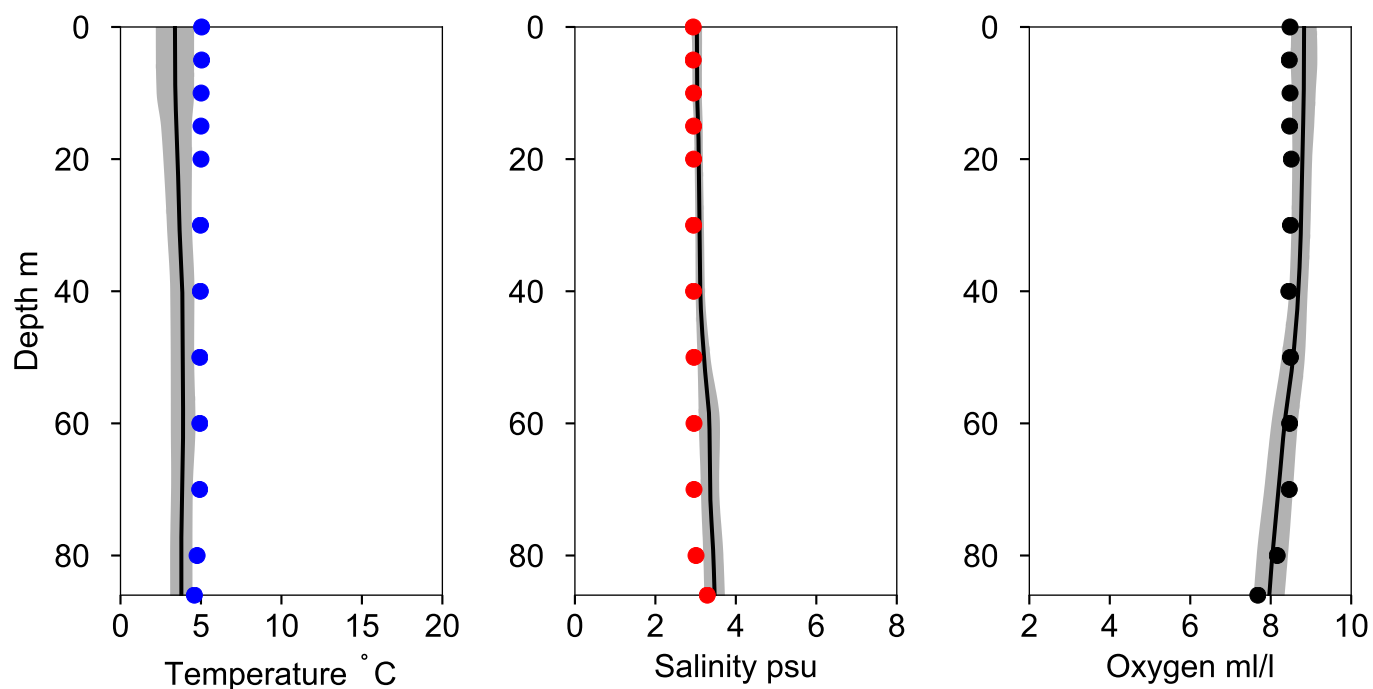


O₂ ml/l



Vertical profiles RR1/A8 December

— Mean 2001-2015 St.Dev. • 2020-12-07



STATION F9 / A13 SURFACE WATER (0-10 m)

Annual Cycles

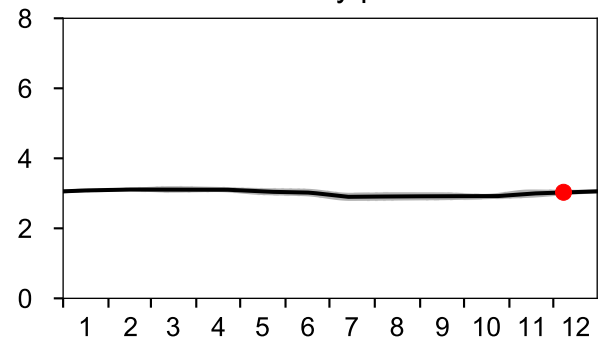
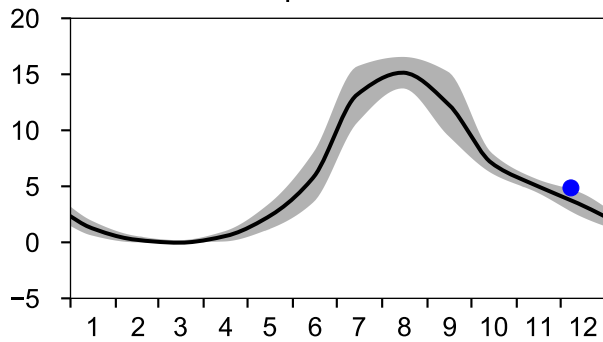
— Mean 2001-2015

■ St.Dev.

● 2020

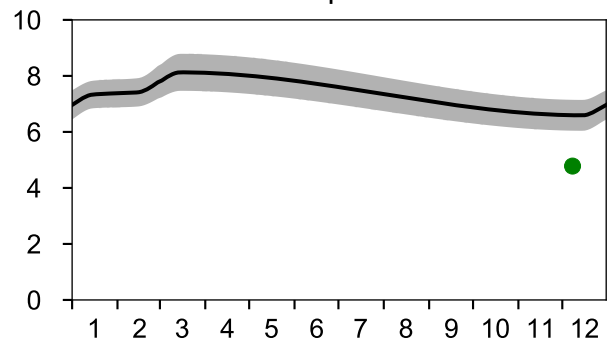
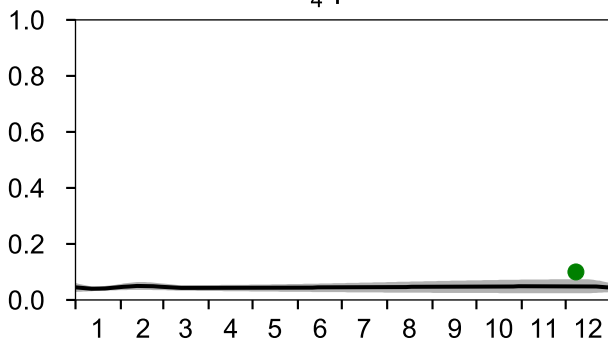
Temperature °C

Salinity psu



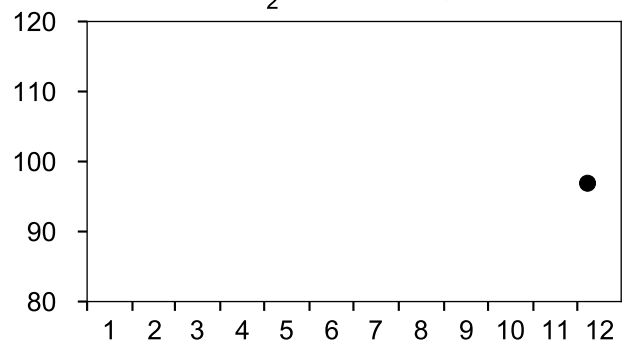
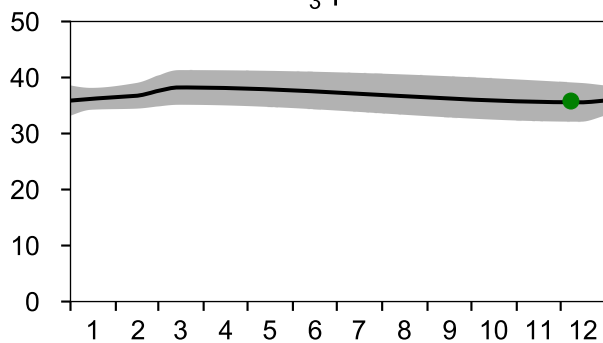
PO₄ µmol/l

DIN µmol/l



SiO₃ µmol/l

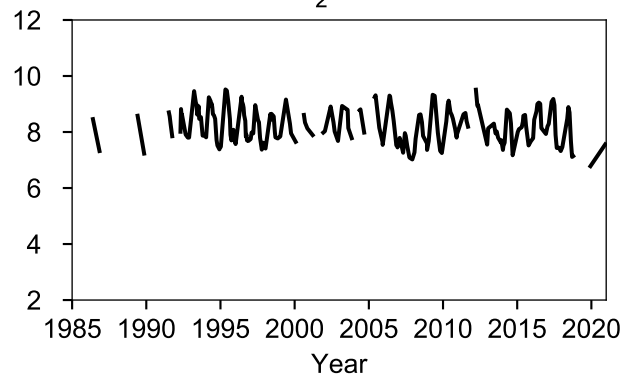
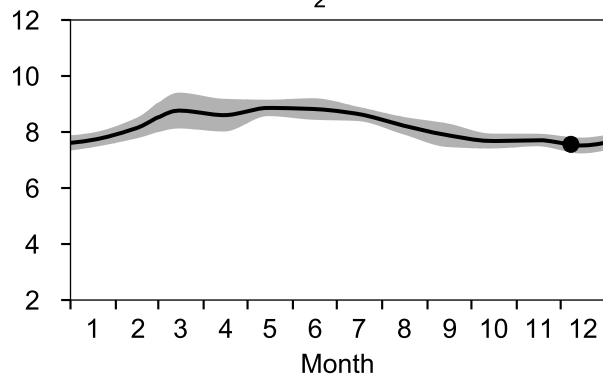
O₂ saturation %



OXYGEN IN BOTTOM WATER (depth >= 120 m)

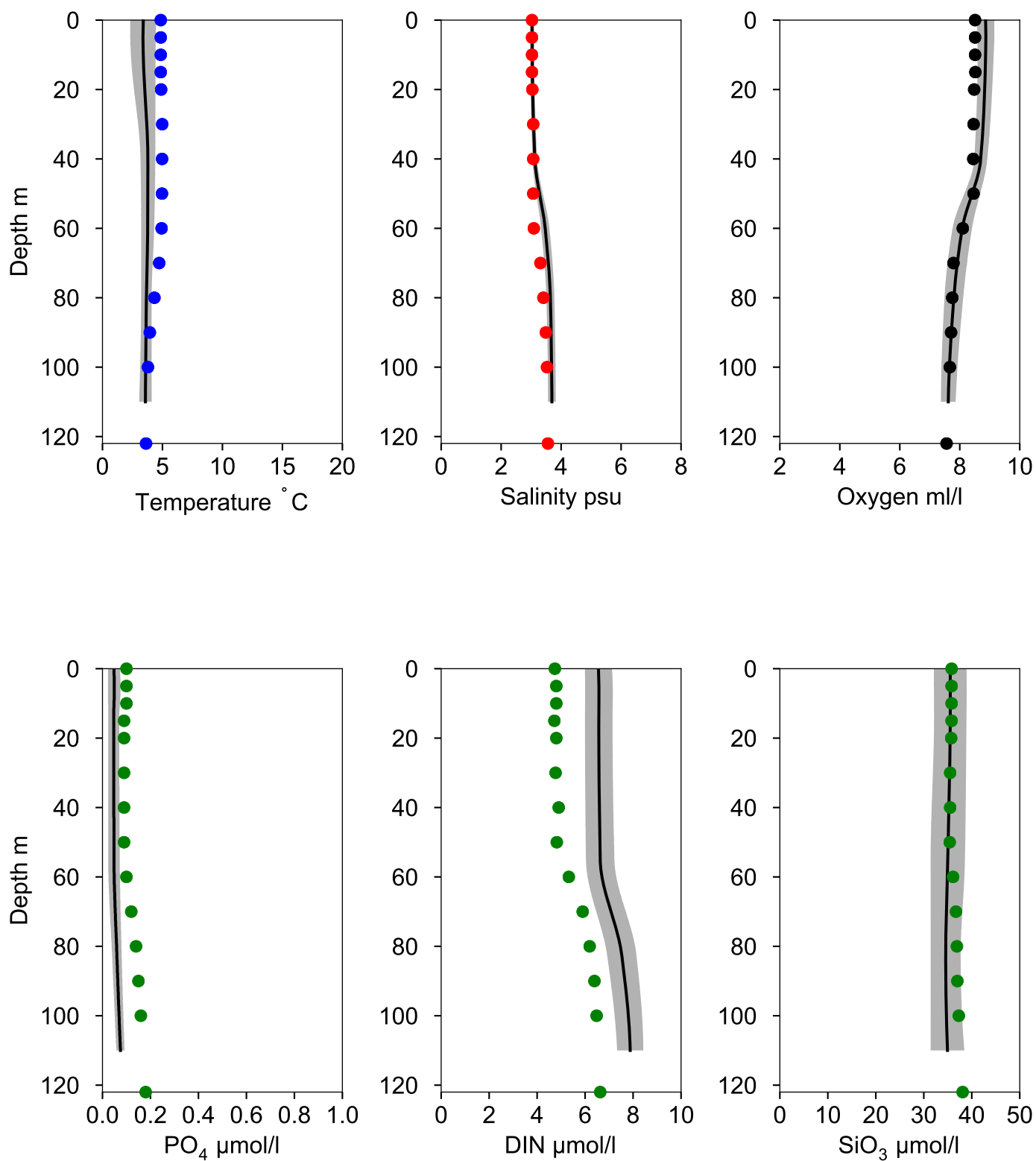
O₂ ml/l

O₂ ml/l



Vertical profiles F9 / A13 December

— Mean 2001-2015 St.Dev. • 2020-12-08



STATION US2 ULVÖDJ SURFACE WATER (0-10 m)

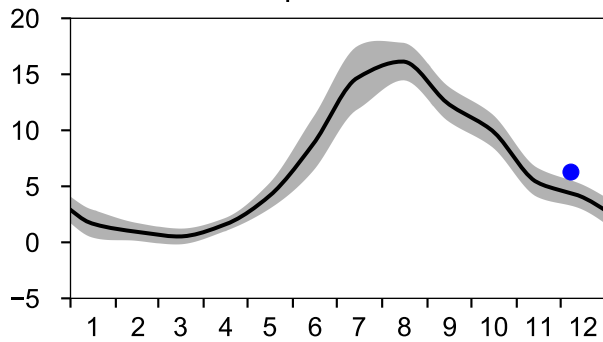
Annual Cycles

— Mean 2001-2015

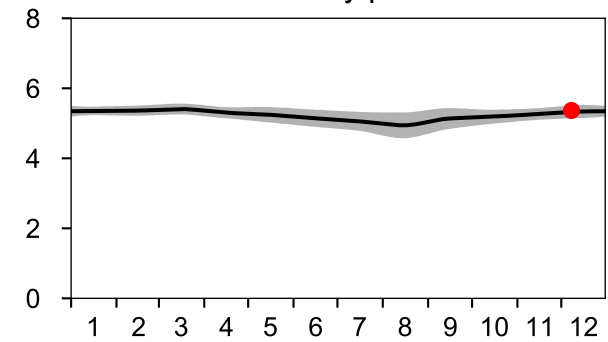
■ St.Dev.

● 2020

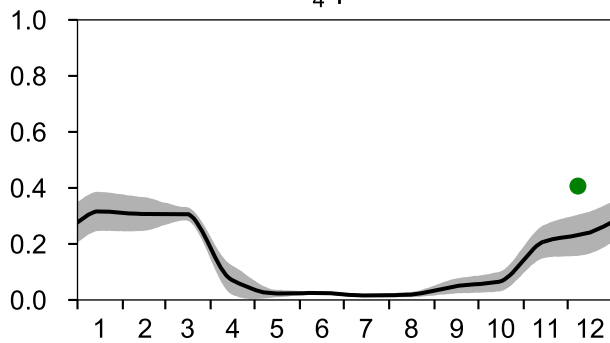
Temperature °C



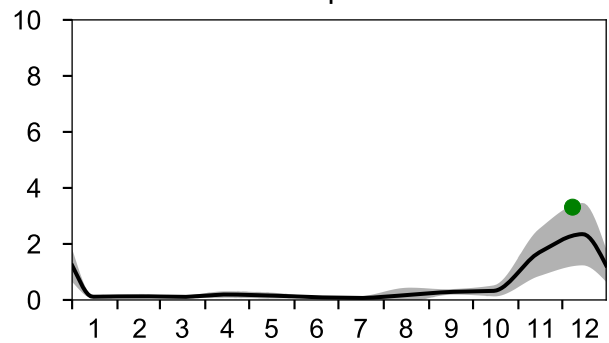
Salinity psu



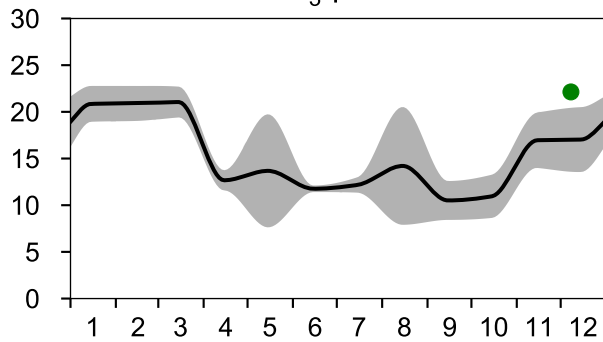
PO₄ µmol/l



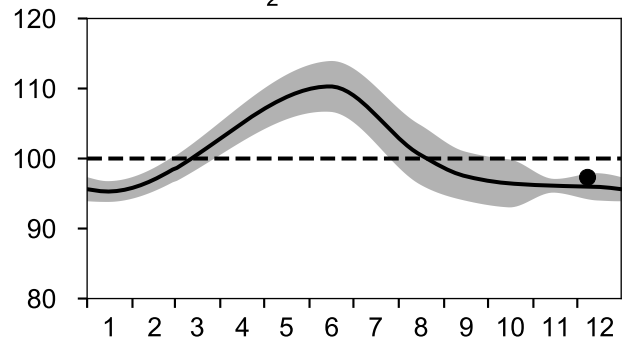
DIN µmol/l



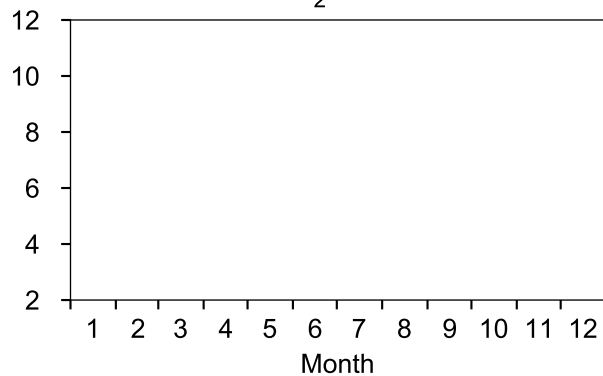
SiO₃ µmol/l



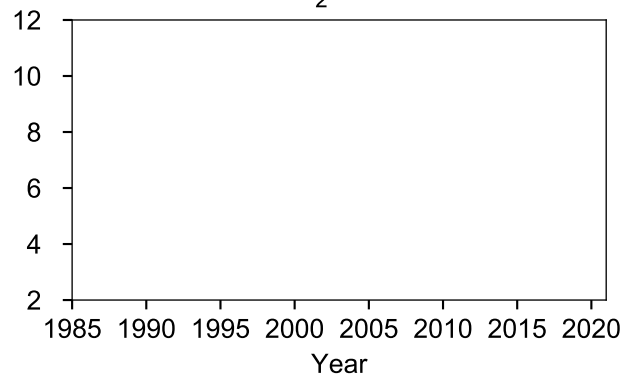
O₂ saturation %



O₂ ml/l

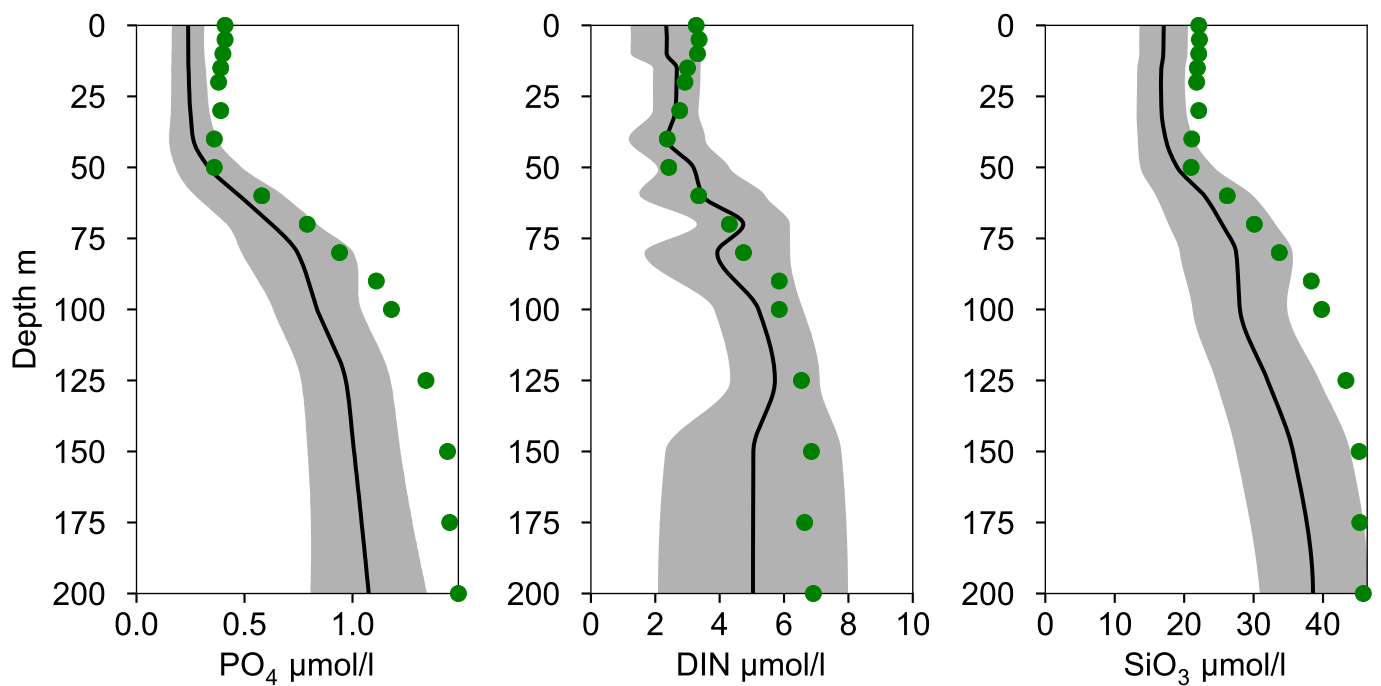
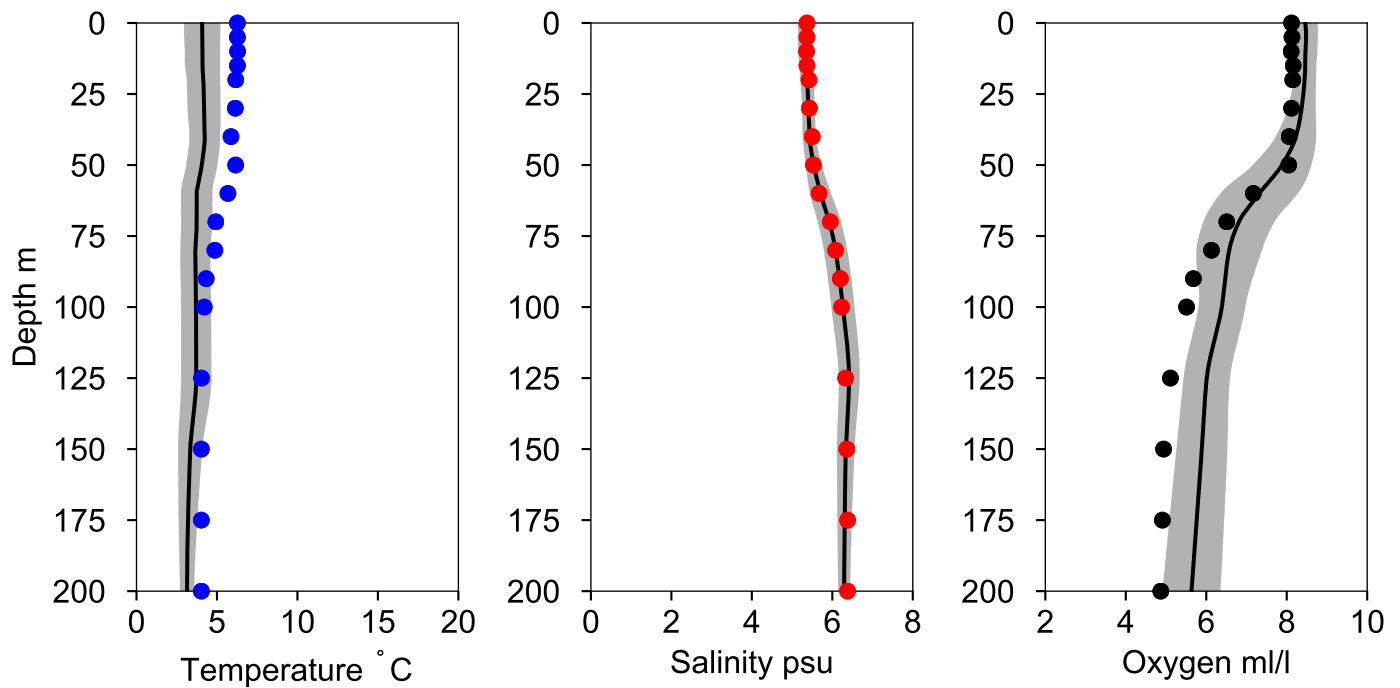


O₂ ml/l



Vertical profiles US2 ULVÖDJ December

— Mean 2001-2015 St.Dev. • 2020-12-08



STATION C3 SURFACE WATER (0-10 m)

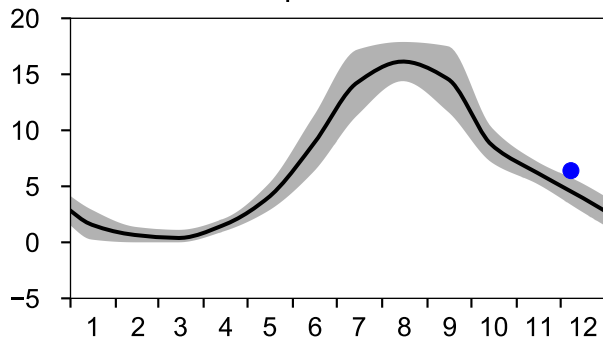
Annual Cycles

— Mean 2001-2015

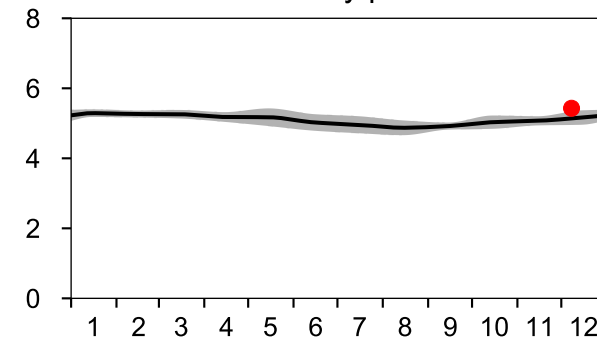
■ St.Dev.

● 2020

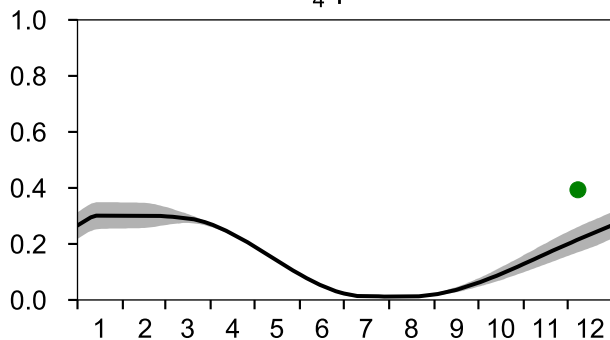
Temperature °C



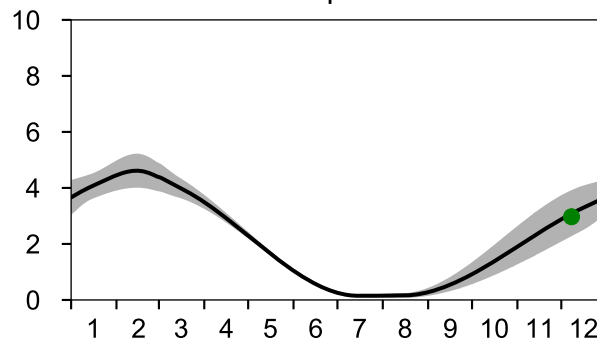
Salinity psu



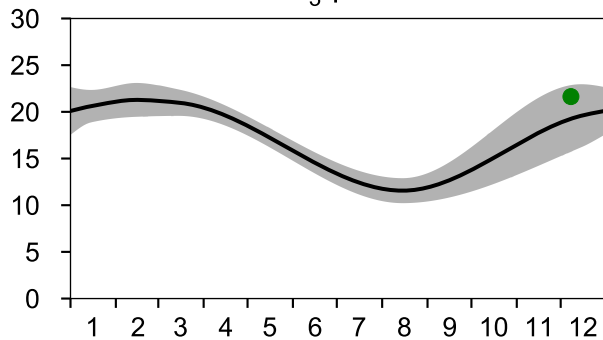
PO₄ µmol/l



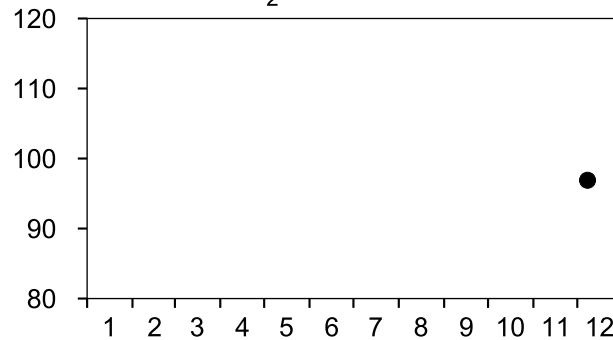
DIN µmol/l



SiO₃ µmol/l

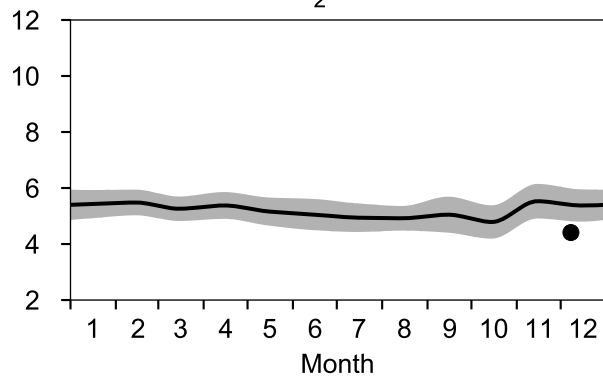


O₂ saturation %

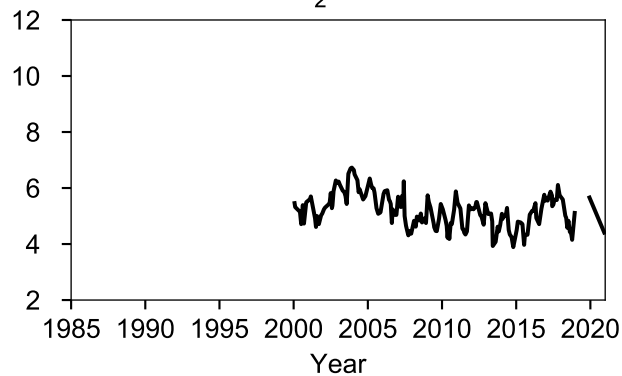


OXYGEN IN BOTTOM WATER (depth >= 180 m)

O₂ ml/l

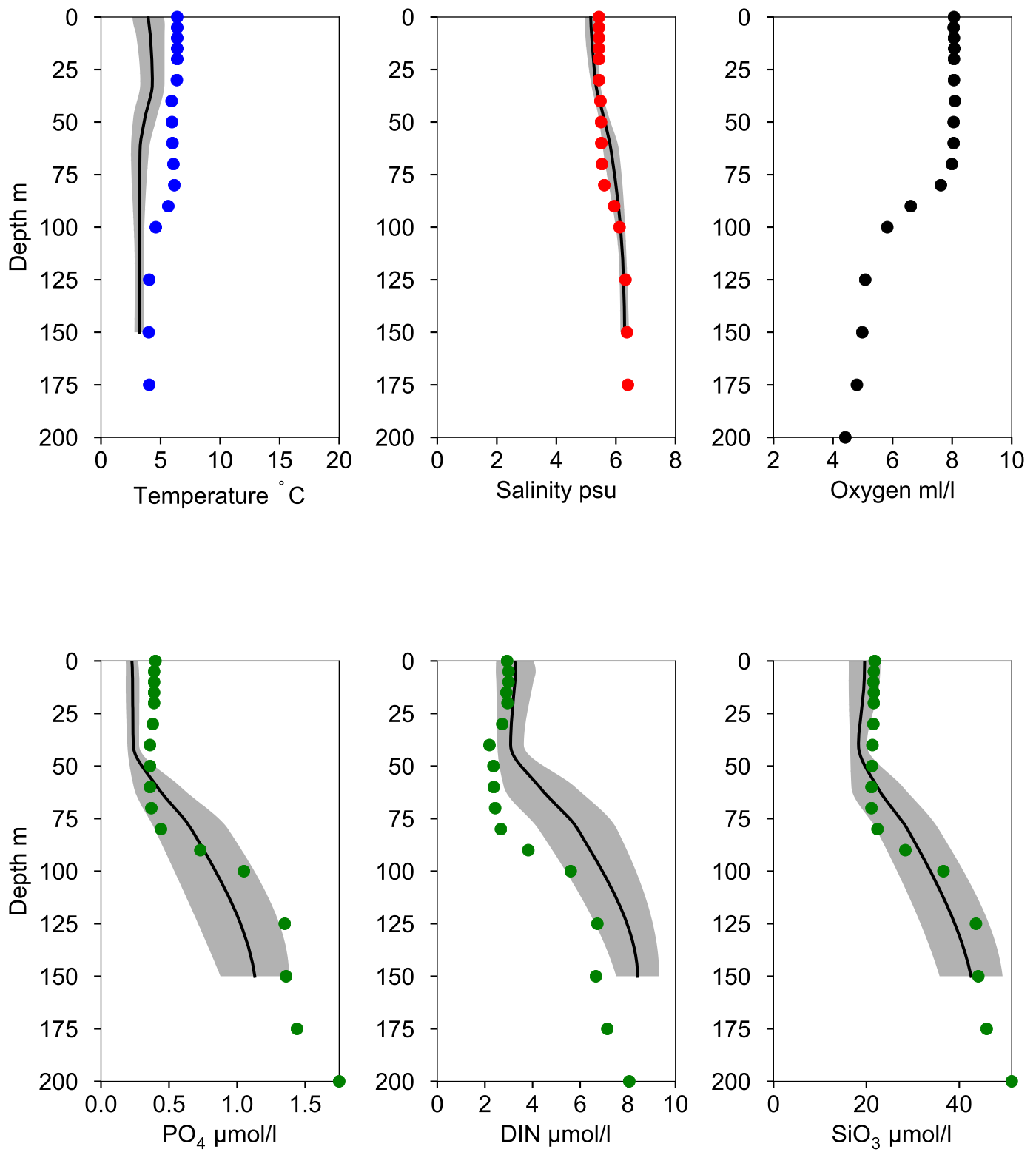


O₂ ml/l



Vertical profiles C3 December

— Mean 2001-2015 St.Dev. • 2020-12-08



STATION MS2/C13 SURFACE WATER (0-10 m)

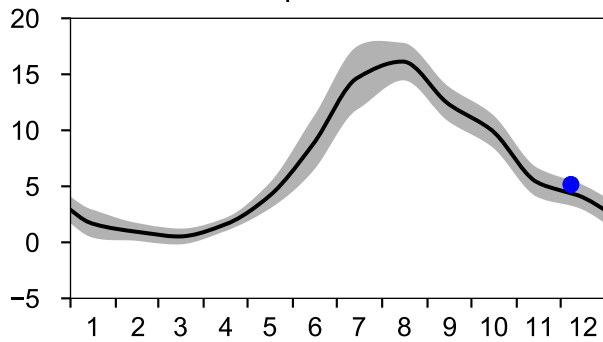
Annual Cycles

— Mean 2001-2015

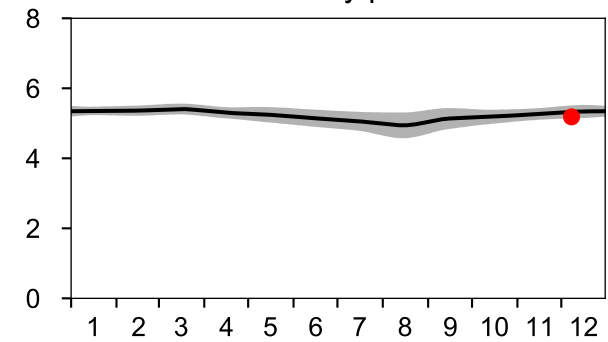
■ St.Dev.

● 2020

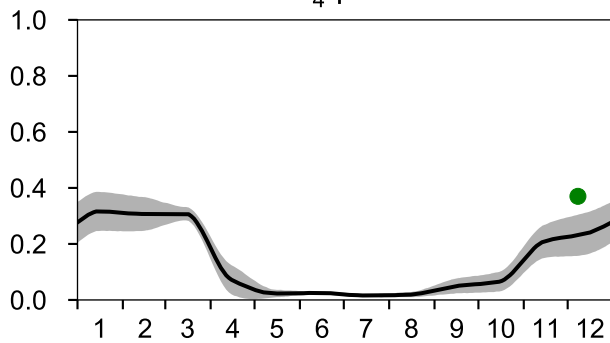
Temperature °C



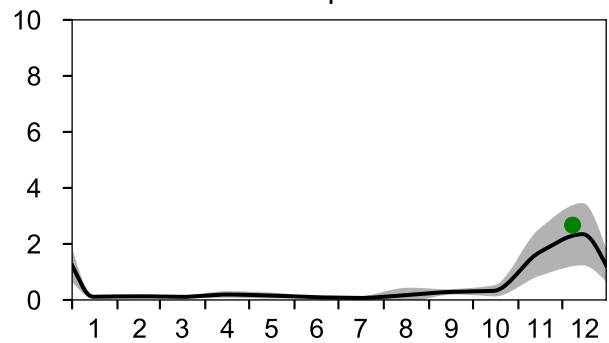
Salinity psu



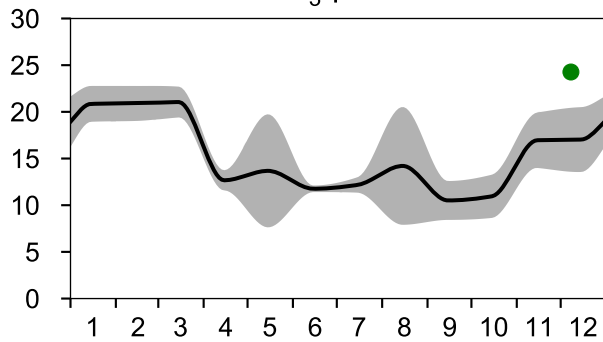
PO₄ µmol/l



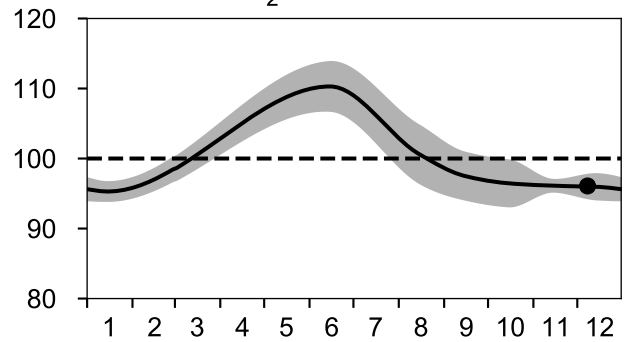
DIN µmol/l



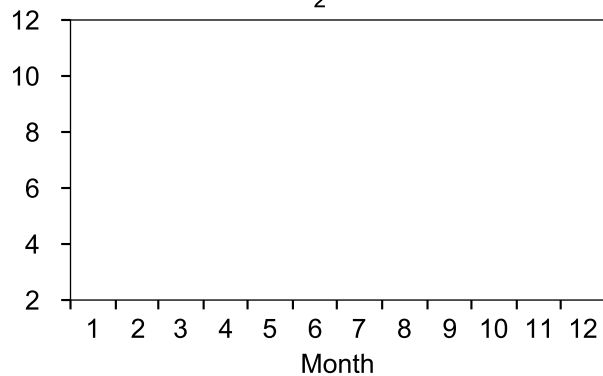
SiO₃ µmol/l



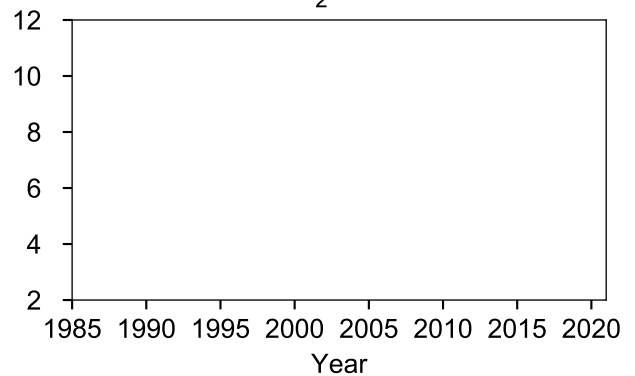
O₂ saturation %



O₂ ml/l

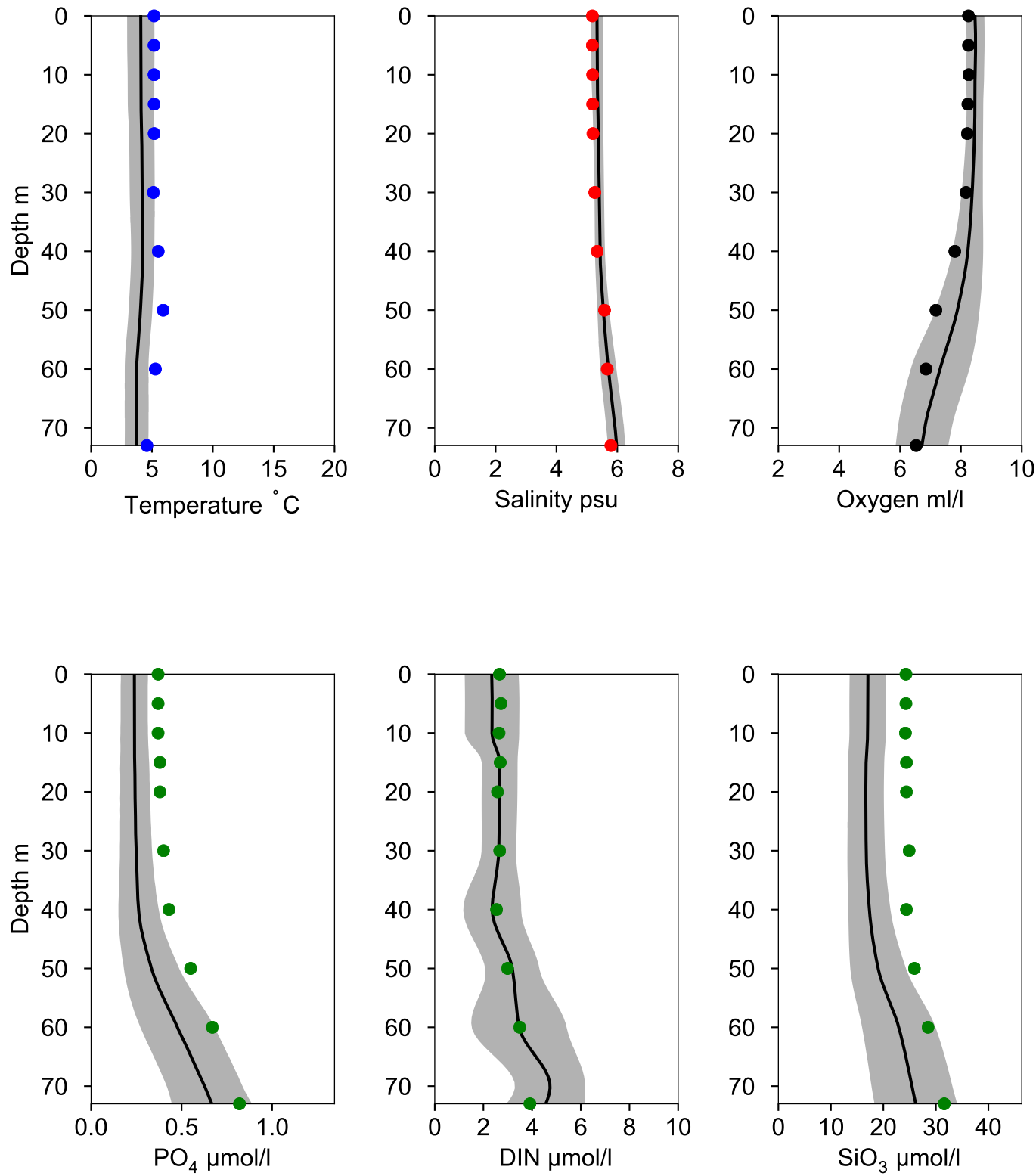


O₂ ml/l



Vertical profiles MS2/C13
December

— Mean 2001-2015 St.Dev. • 2020-12-08



STATION MS4 / C14 SURFACE WATER (0-10 m)

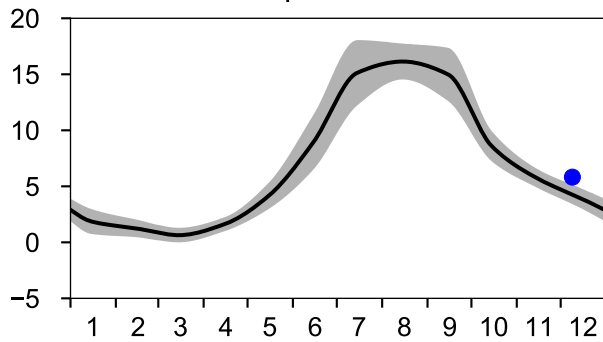
Annual Cycles

— Mean 2001-2015

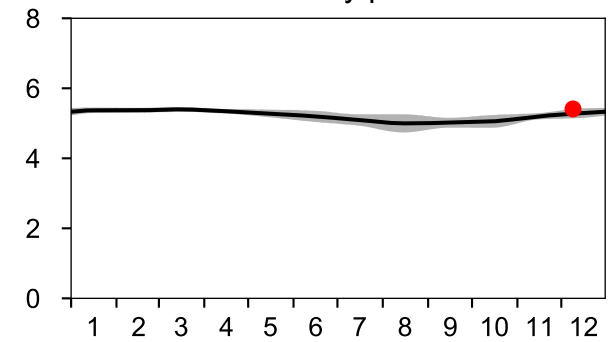
■ St.Dev.

● 2020

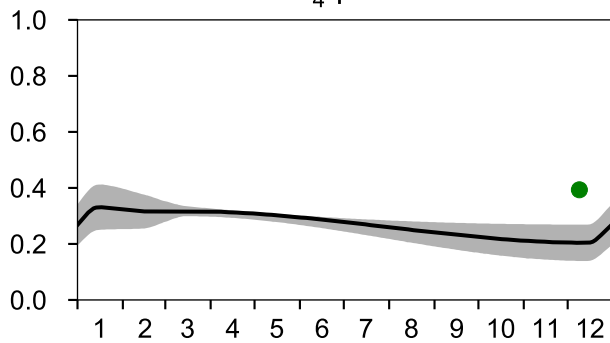
Temperature °C



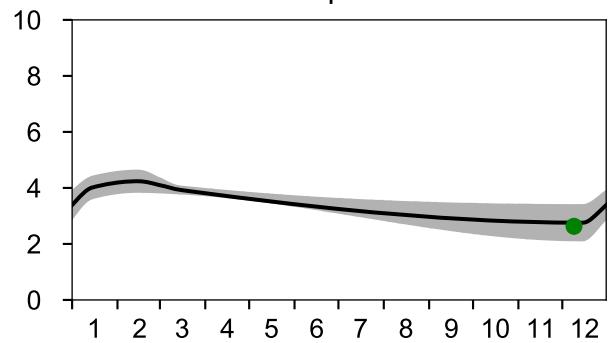
Salinity psu



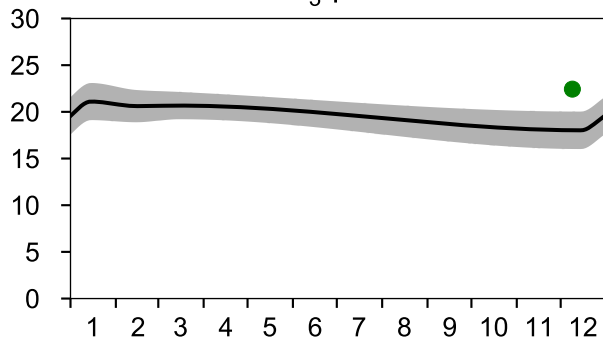
PO₄ µmol/l



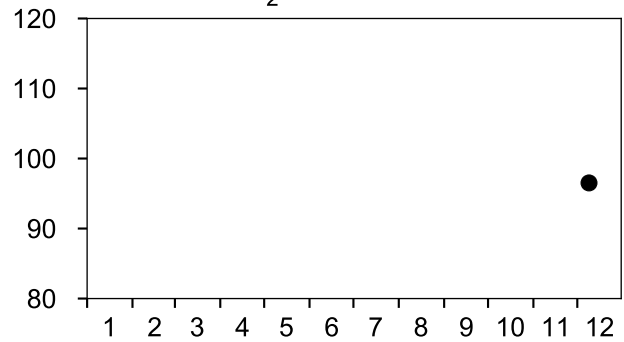
DIN µmol/l



SiO₃ µmol/l

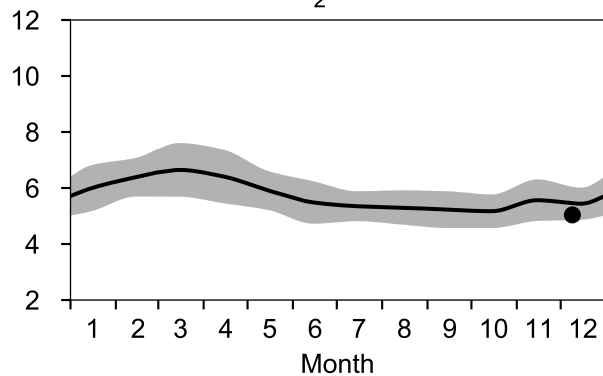


O₂ saturation %

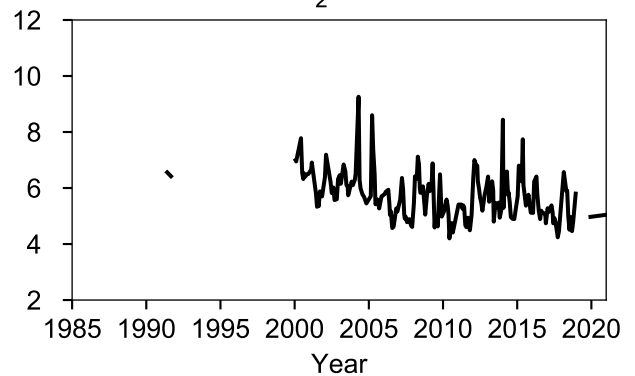


OXYGEN IN BOTTOM WATER (depth >= 80 m)

O₂ ml/l

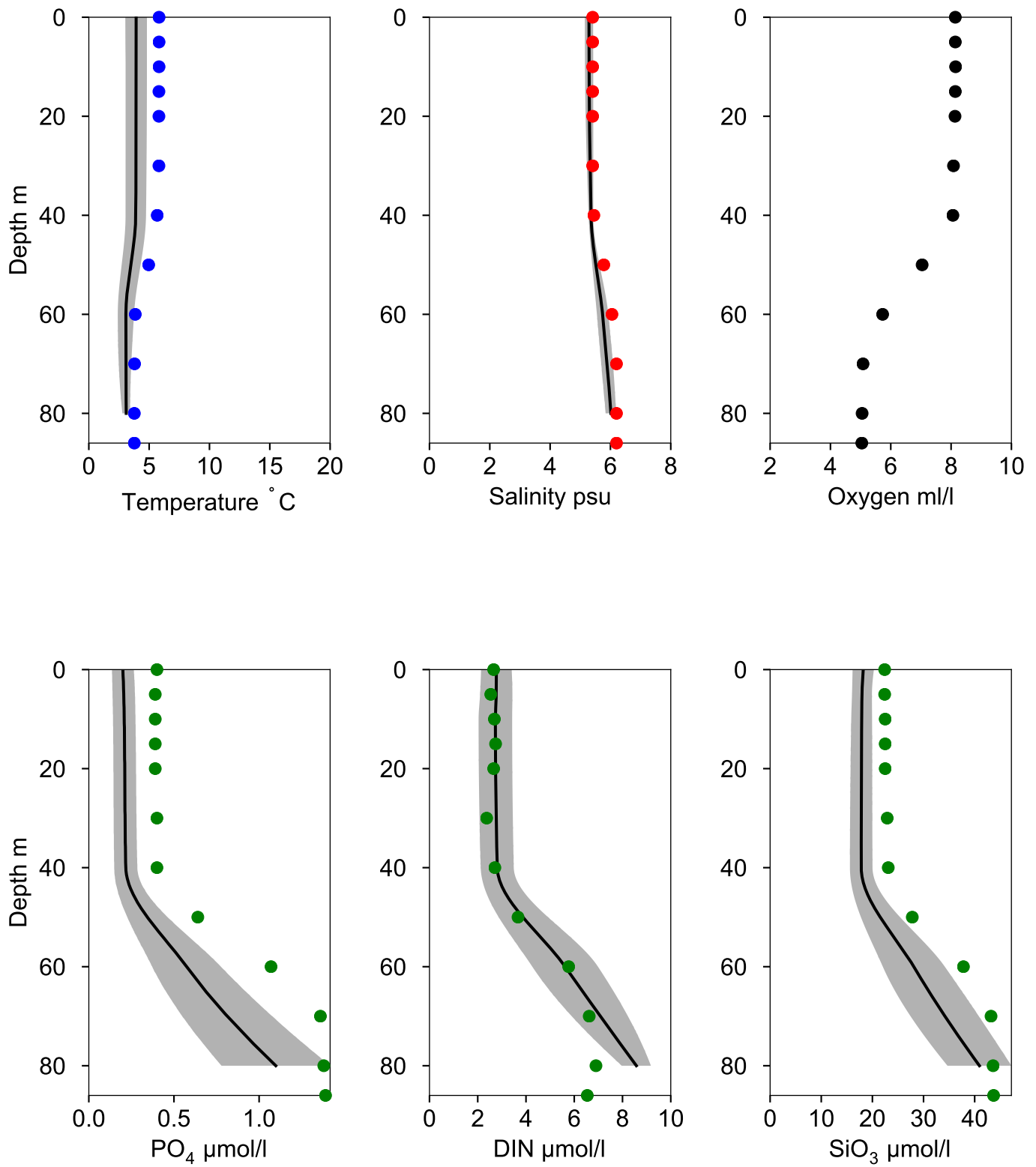


O₂ ml/l



Vertical profiles MS4 / C14 December

— Mean 2001-2015 St.Dev. • 2020-12-09



STATION SR1A/C11 SURFACE WATER (0-10 m)

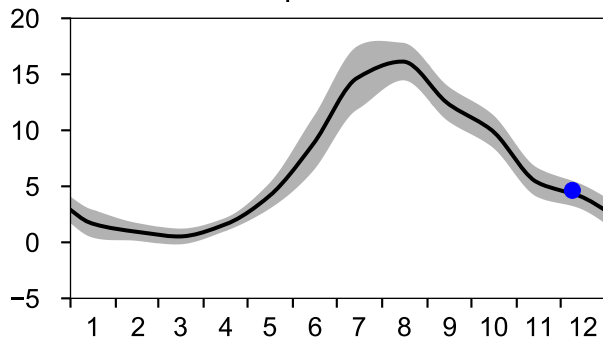
Annual Cycles

— Mean 2001-2015

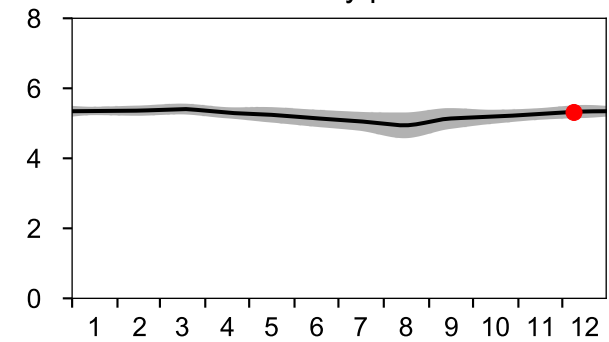
■ St.Dev.

● 2020

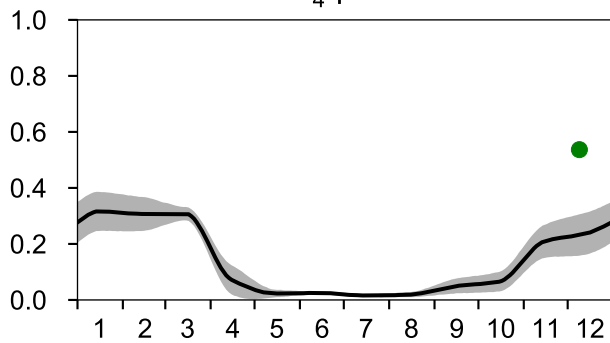
Temperature °C



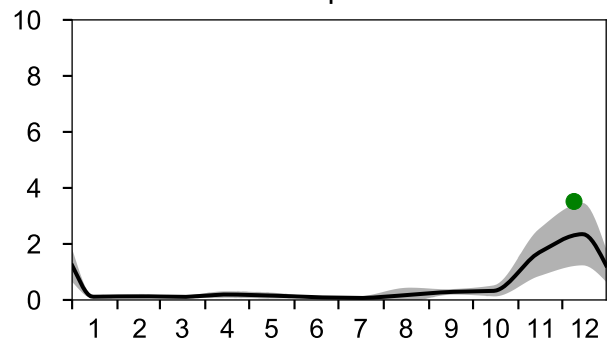
Salinity psu



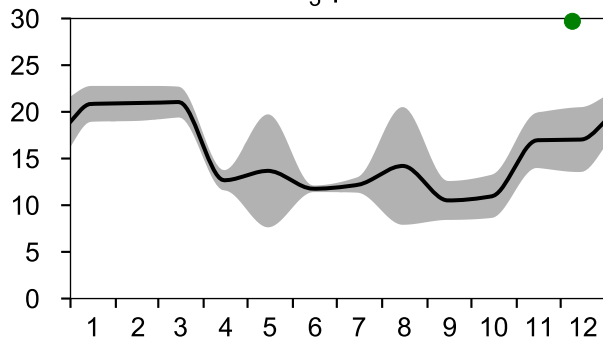
PO₄ μmol/l



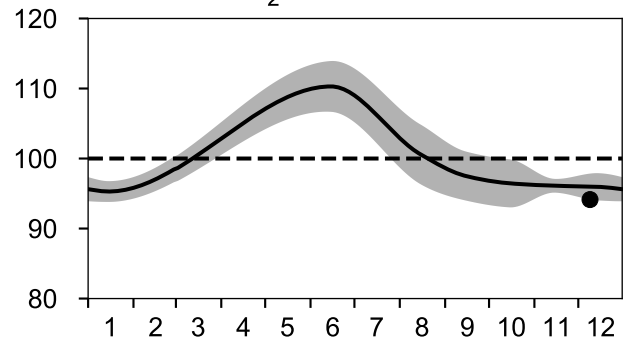
DIN μmol/l



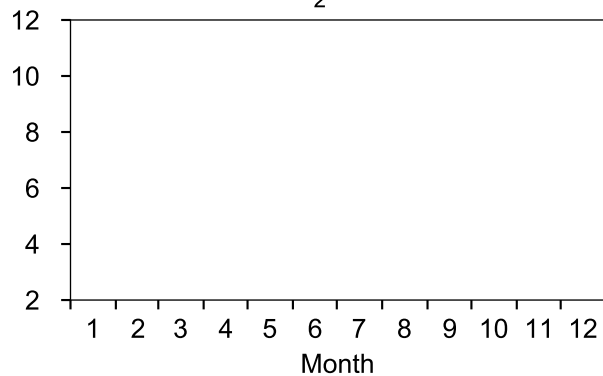
SiO₃ μmol/l



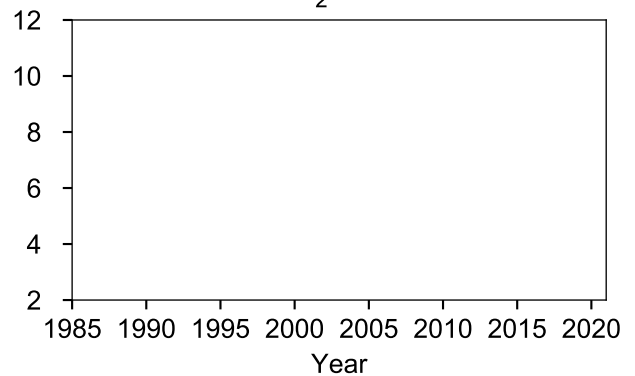
O₂ saturation %



O₂ ml/l

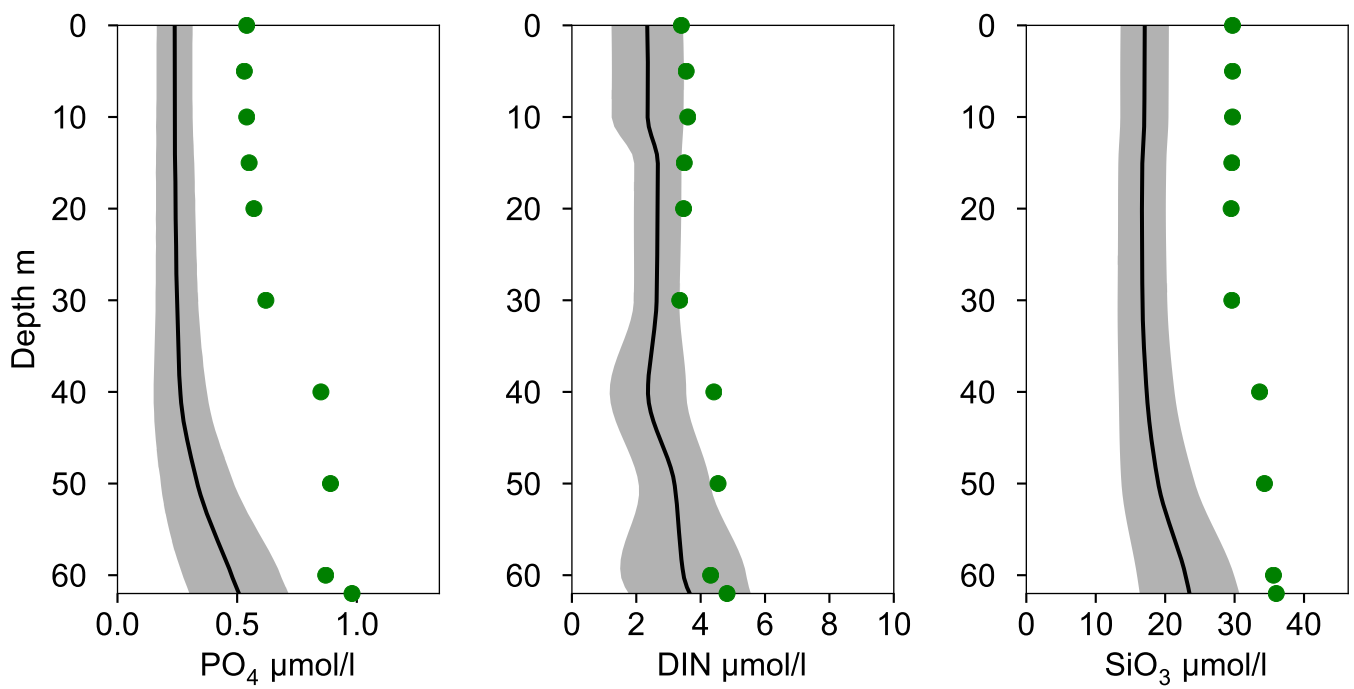
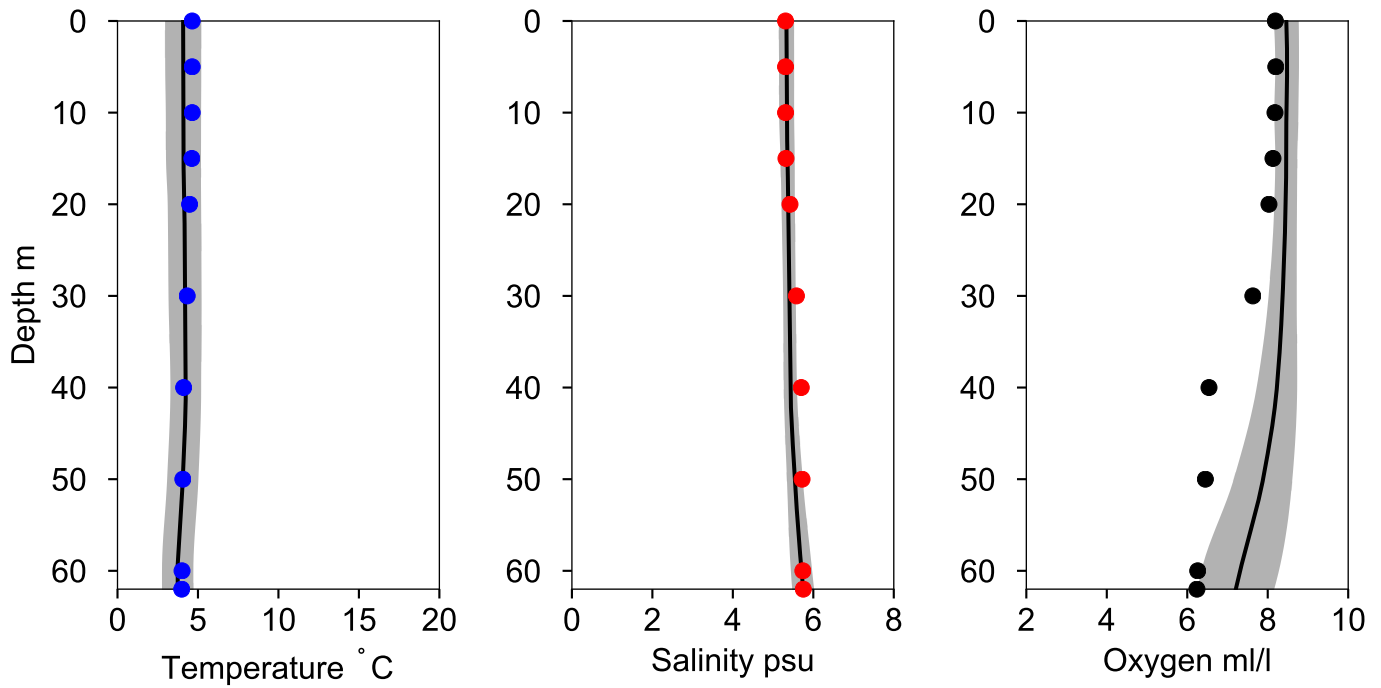


O₂ ml/l



Vertical profiles SR1A/C11 December

— Mean 2001-2015 St.Dev. • 2020-12-09



STATION SR3/C24 SURFACE WATER (0-10 m)

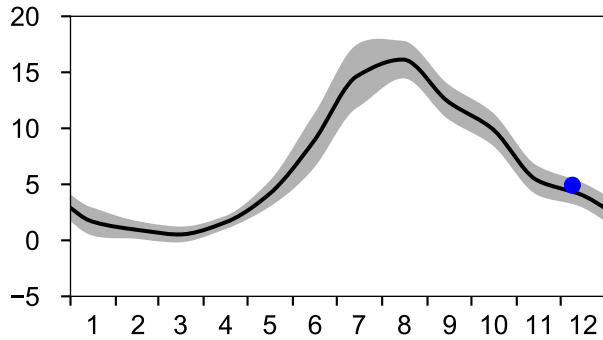
Annual Cycles

— Mean 2001-2015

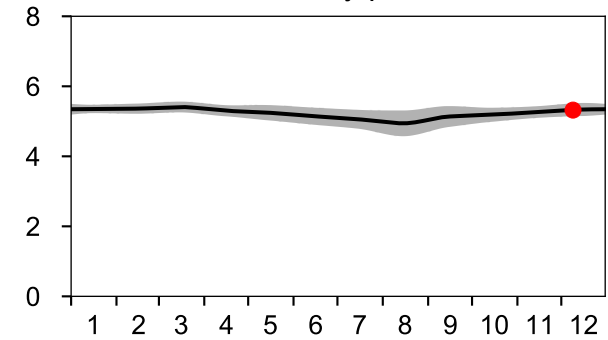
■ St.Dev.

● 2020

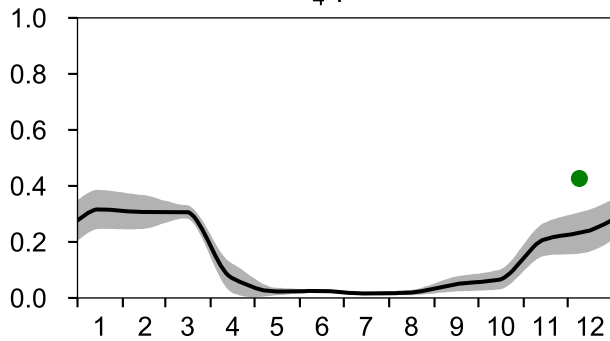
Temperature °C



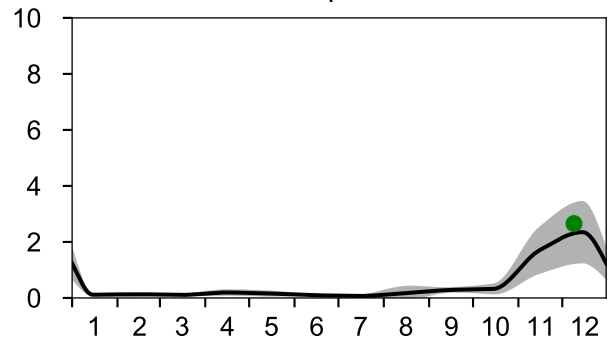
Salinity psu



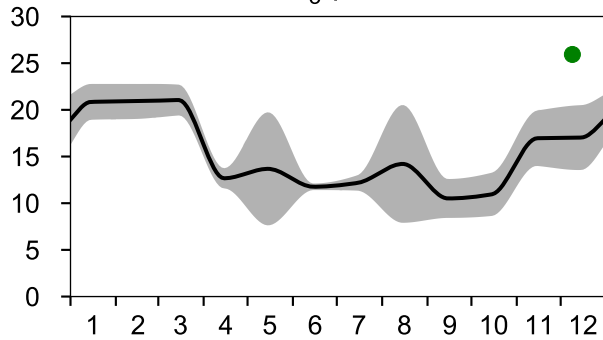
PO₄ µmol/l



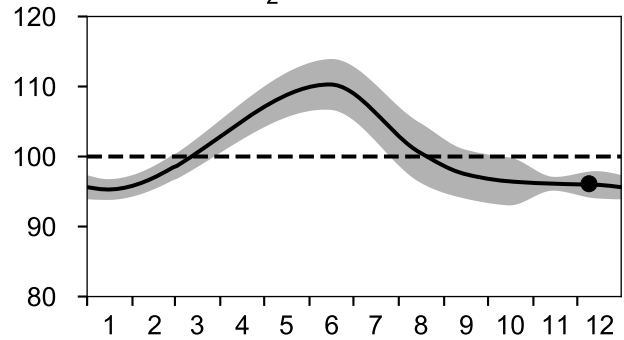
DIN µmol/l



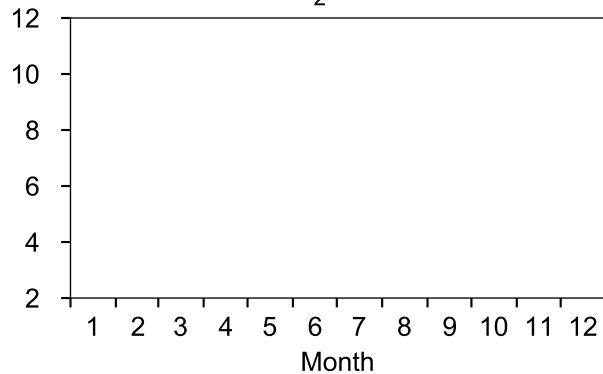
SiO₃ µmol/l



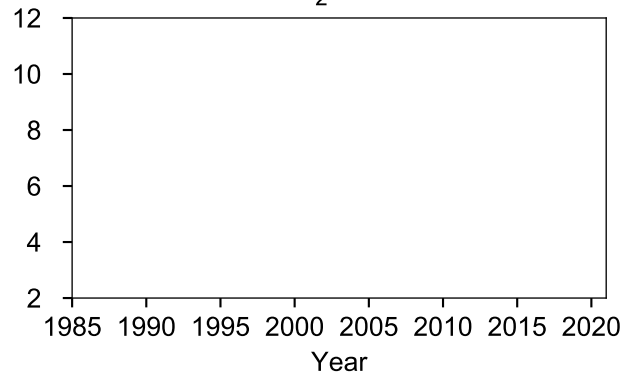
O₂ saturation %



O₂ ml/l

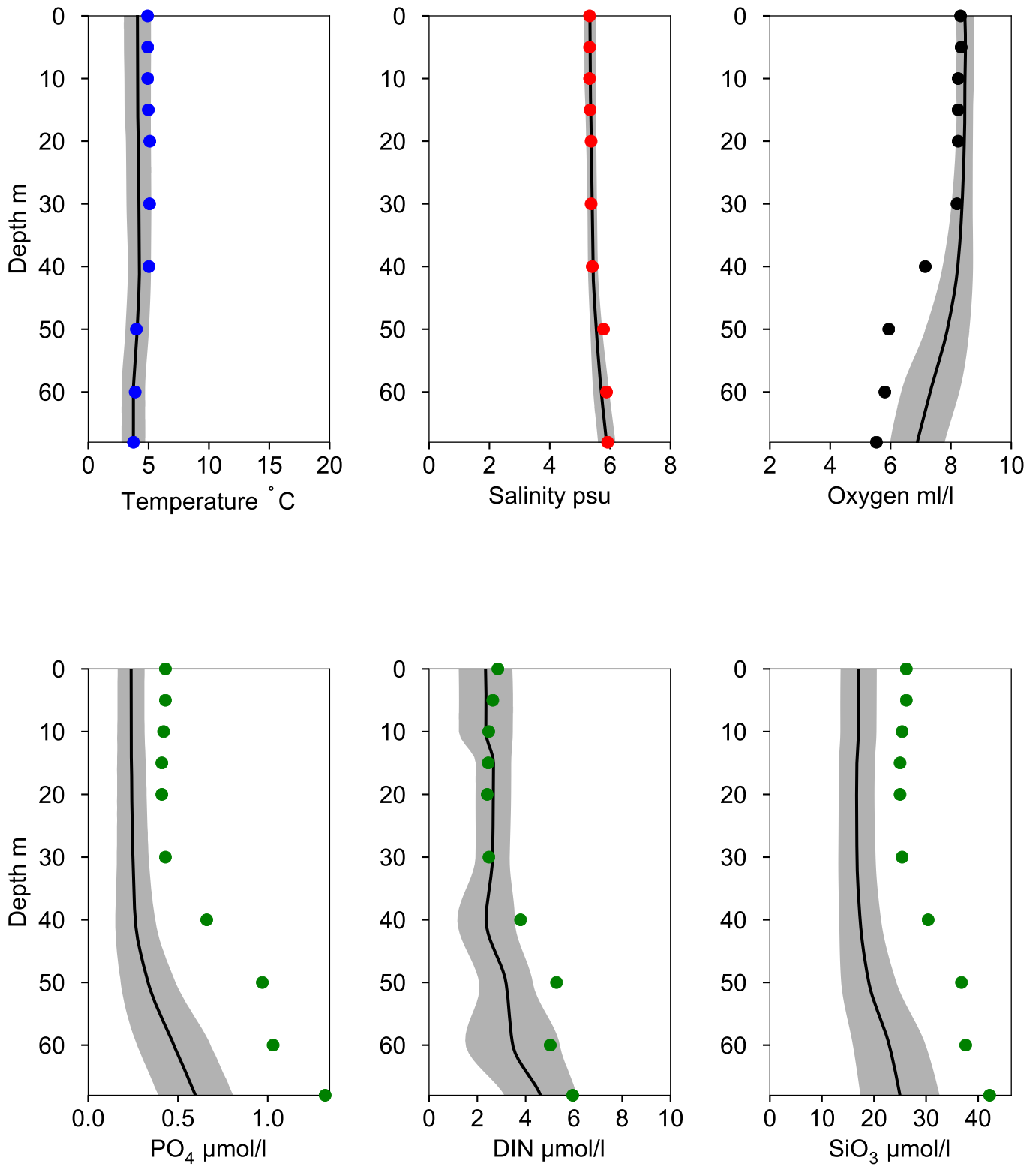


O₂ ml/l



Vertical profiles SR3/C24 December

— Mean 2001-2015 St.Dev. • 2020-12-09



STATION F33 GRUNDKALLEN SURFACE WATER (0-10 m)

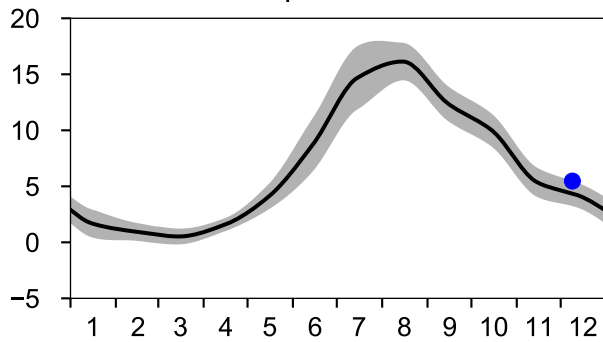
Annual Cycles

— Mean 2001-2015

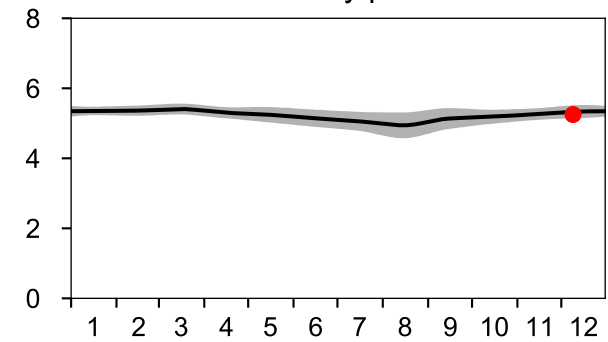
■ St.Dev.

● 2020

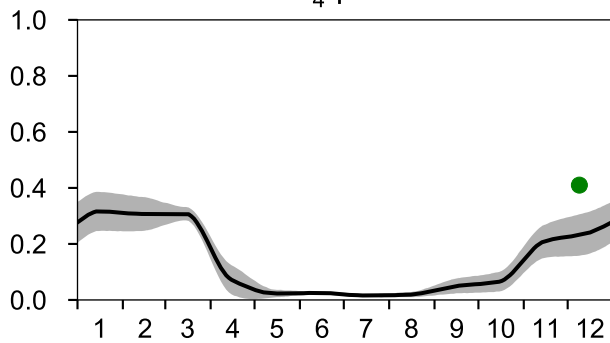
Temperature °C



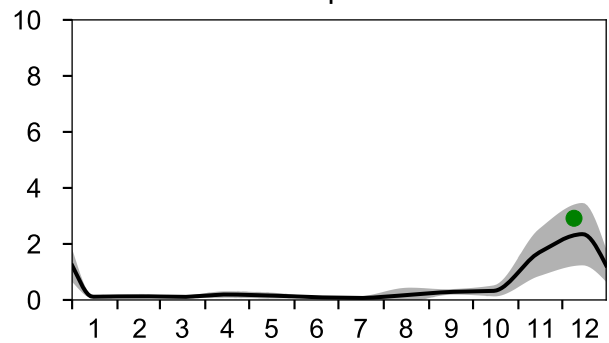
Salinity psu



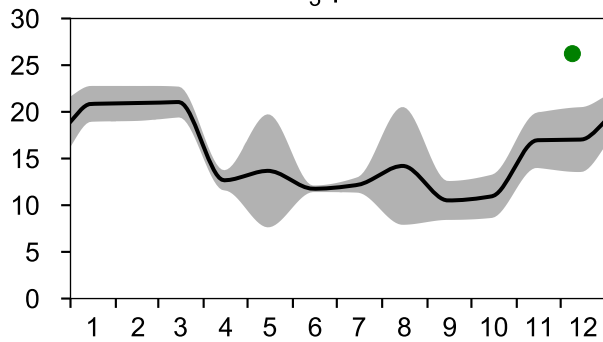
PO₄ µmol/l



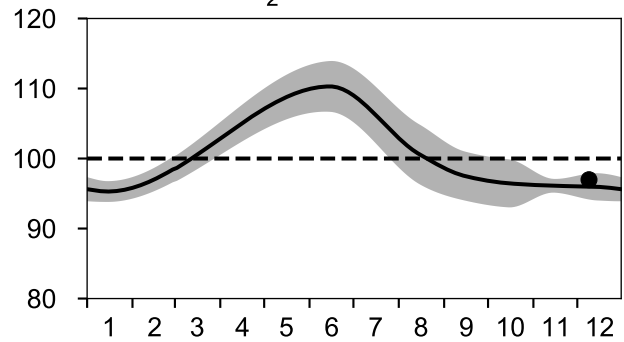
DIN µmol/l



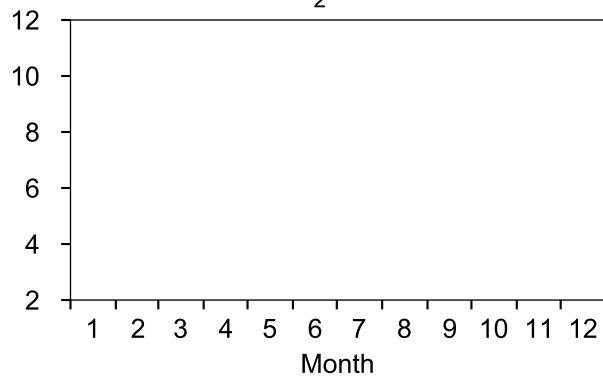
SiO₃ µmol/l



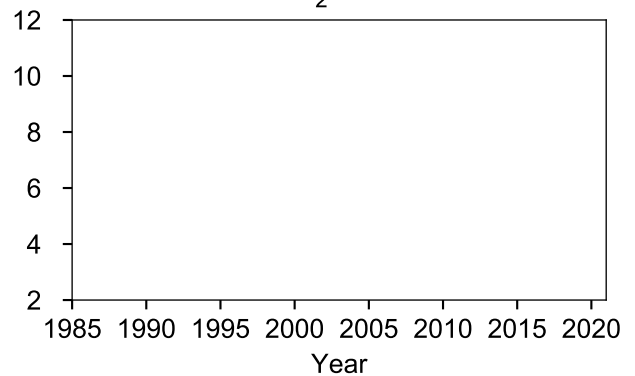
O₂ saturation %



O₂ ml/l

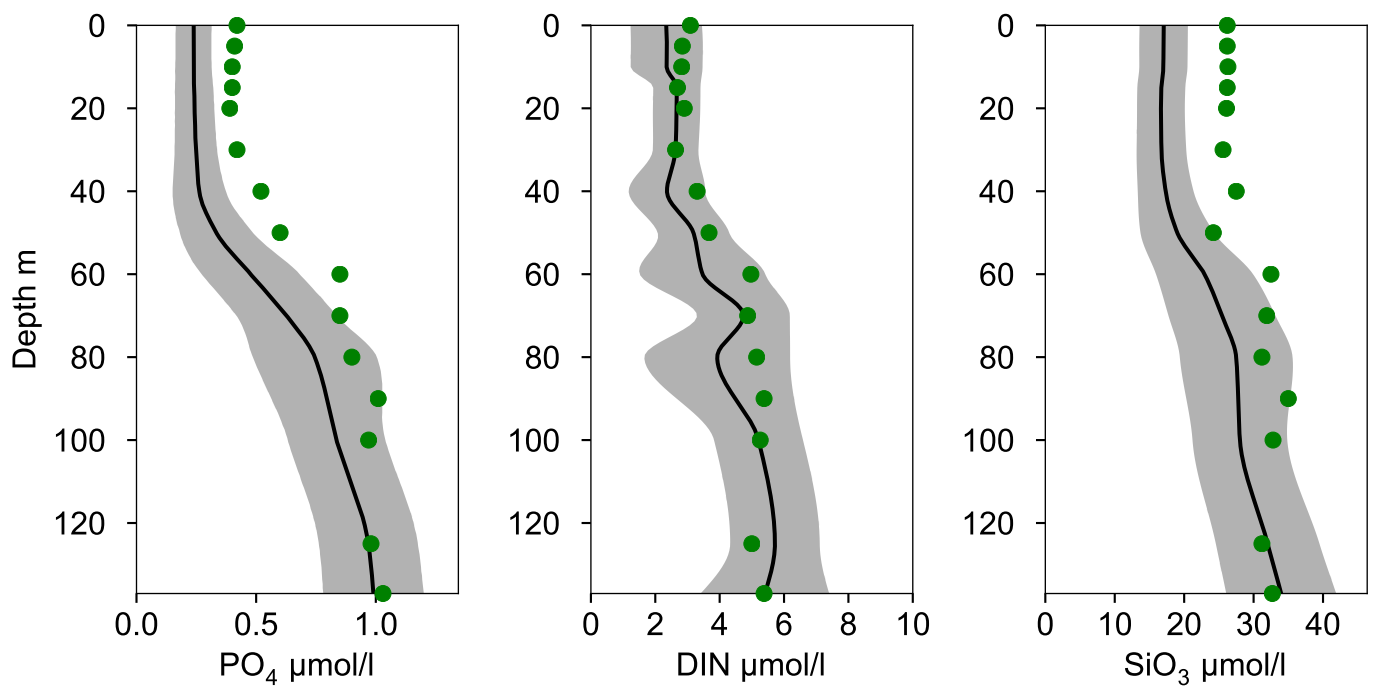
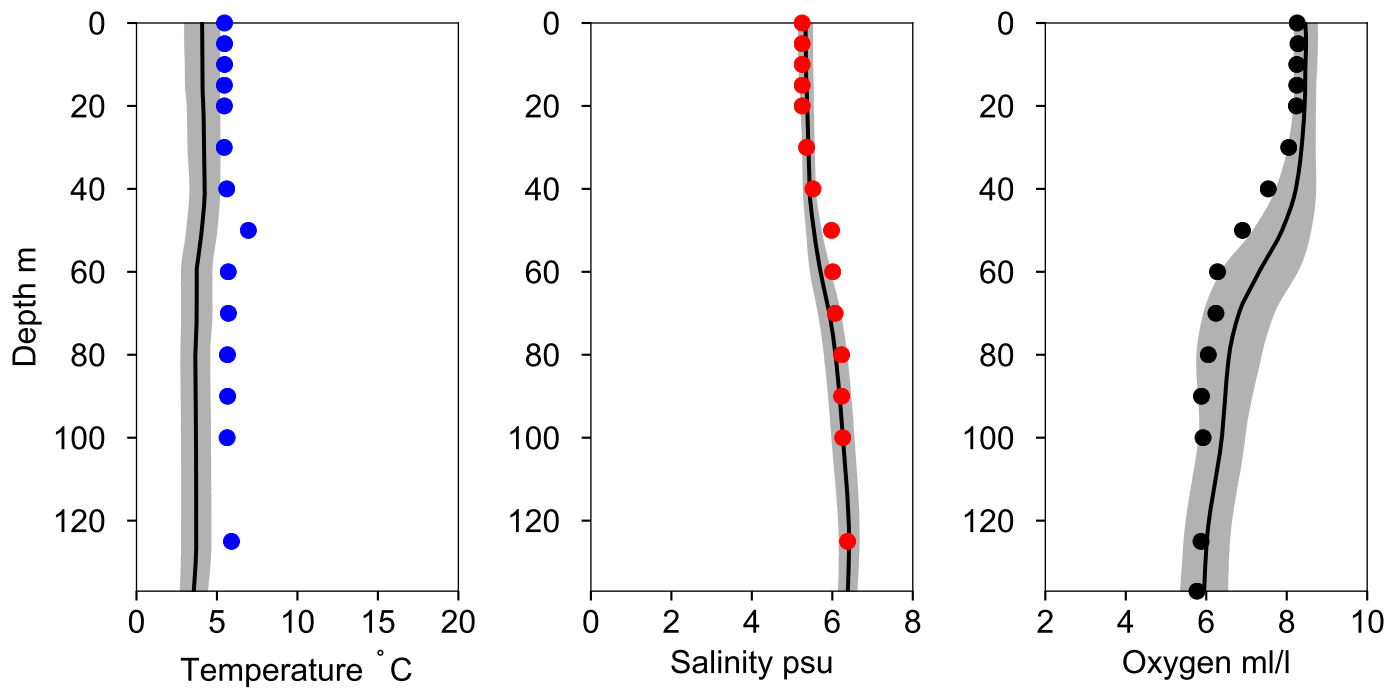


O₂ ml/l



Vertical profiles F33 GRUNDKALLEN December

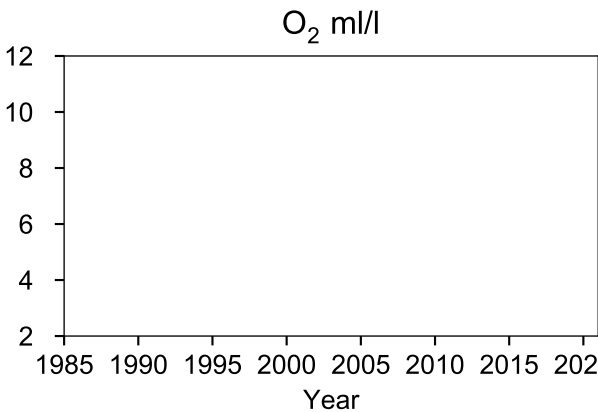
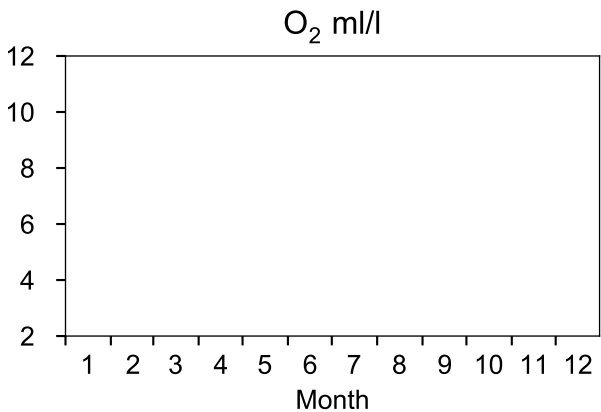
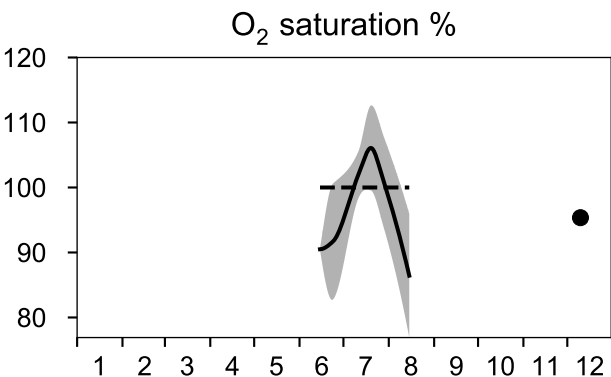
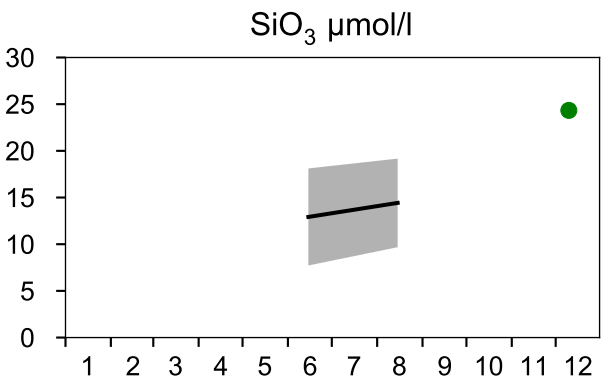
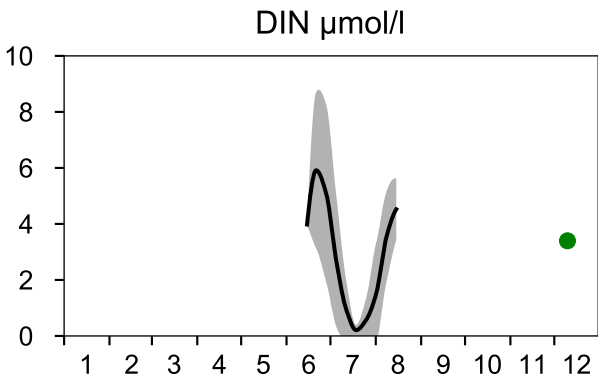
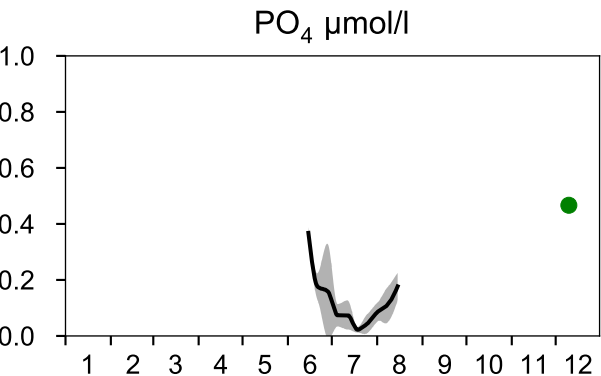
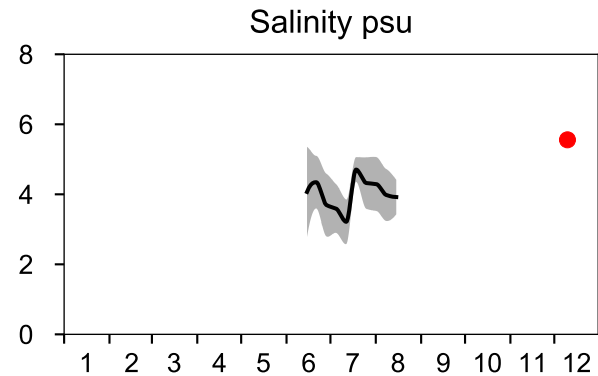
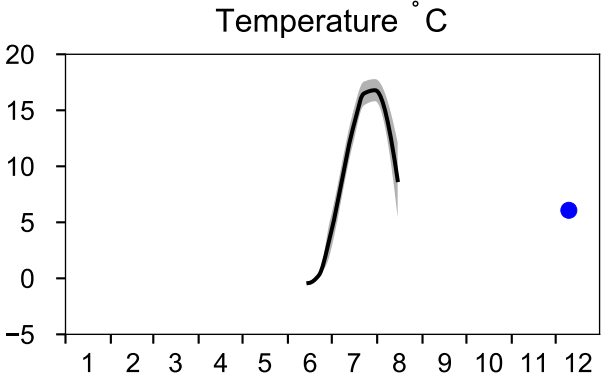
— Mean 2001-2015 St.Dev. • 2020-12-09



STATION NORRA RANDEN SURFACE WATER (0-10 m)

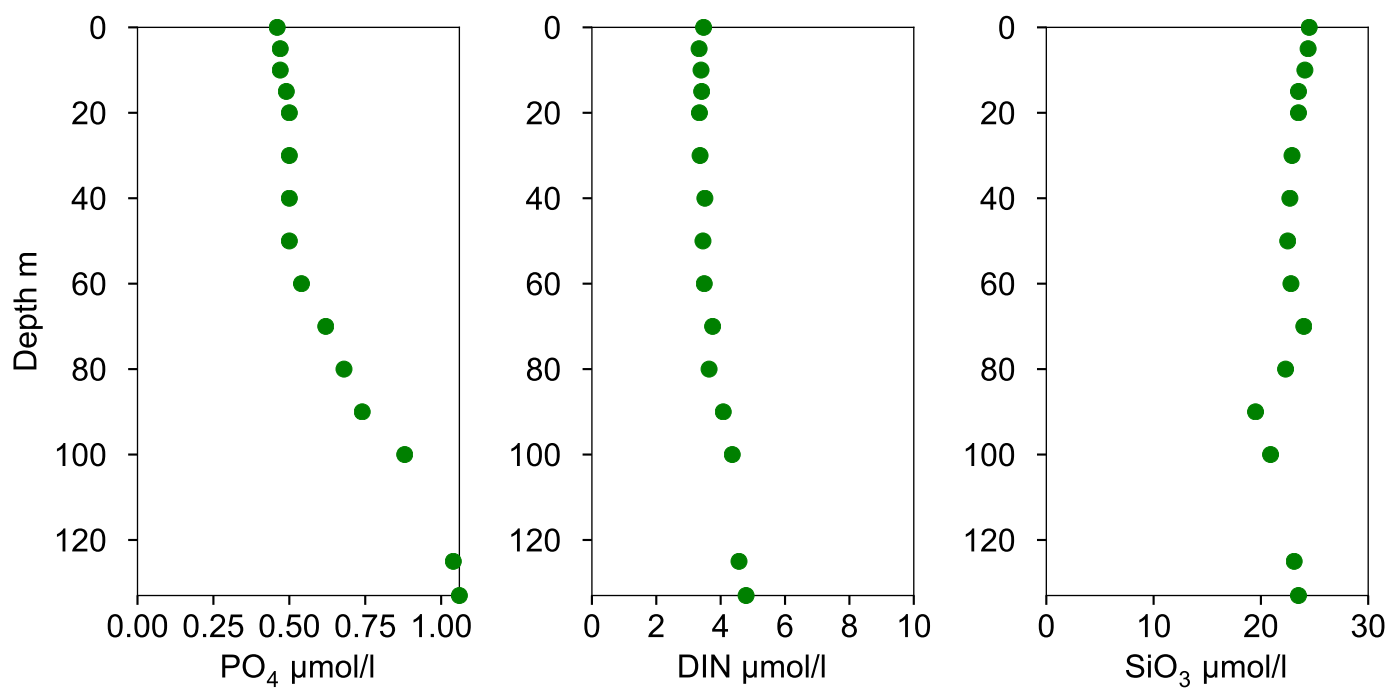
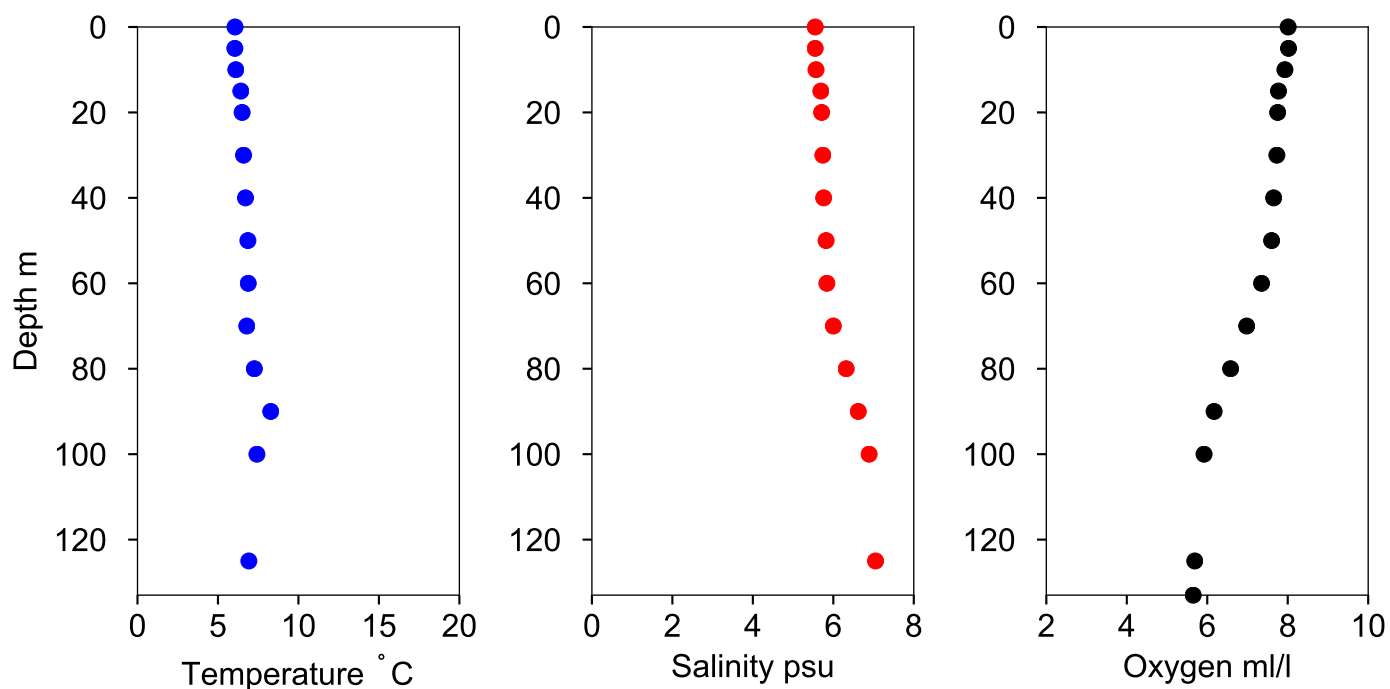
Annual Cycles

— Mean 2001-2015 St.Dev. • 2020



Vertical profiles NORRA RANDEN December

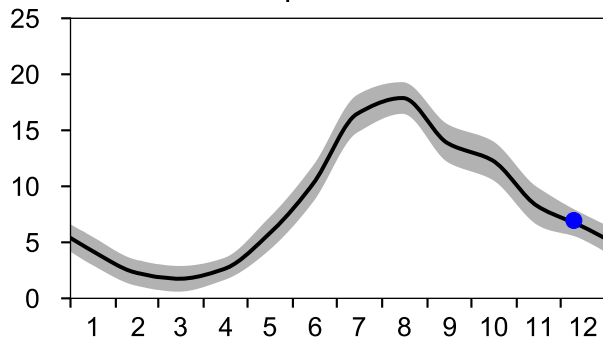
— Mean 2001-2015 ■ St.Dev. ● 2020-12-10



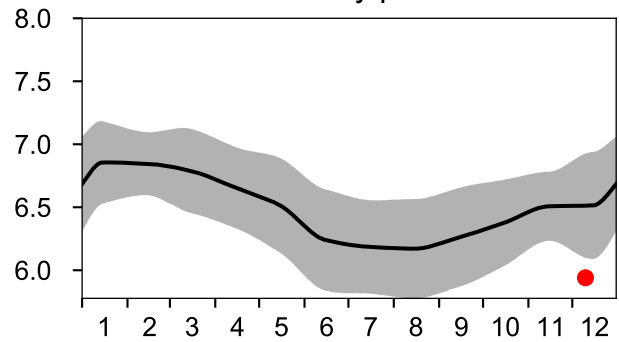
STATION TRÖSKELN ÅLANDS HAV SURFACE WATER (0-10 m)

Annual Cycles

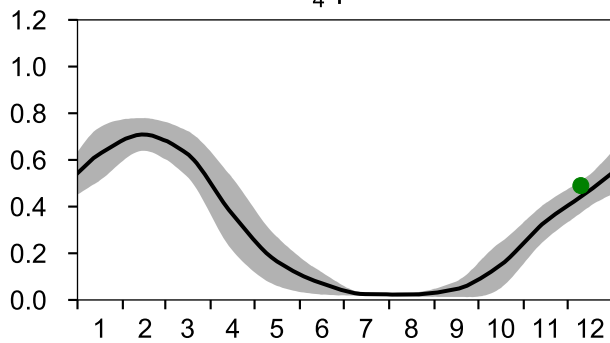
— Mean 2001-2015
Temperature °C



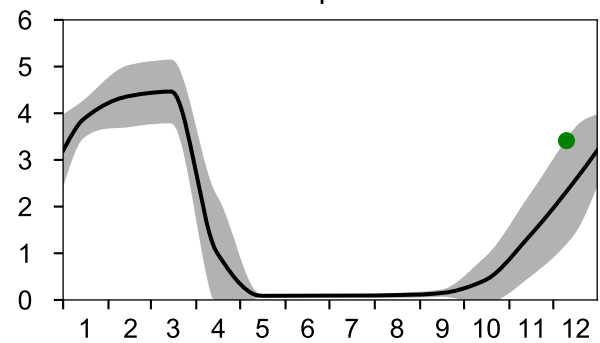
— St.Dev. ● 2020
Salinity psu



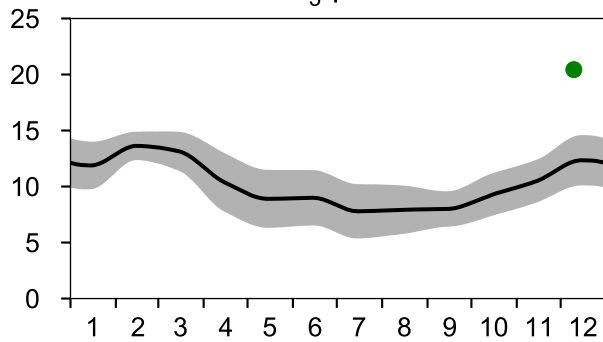
PO₄ µmol/l



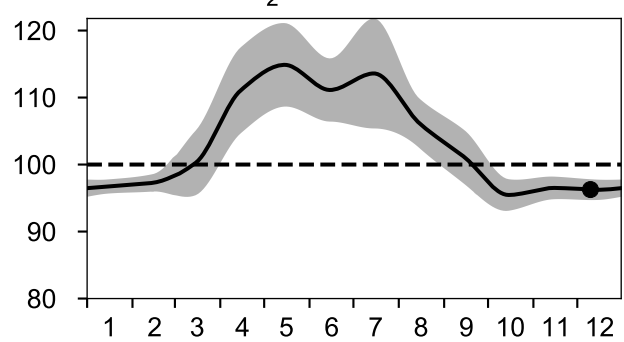
DIN µmol/l



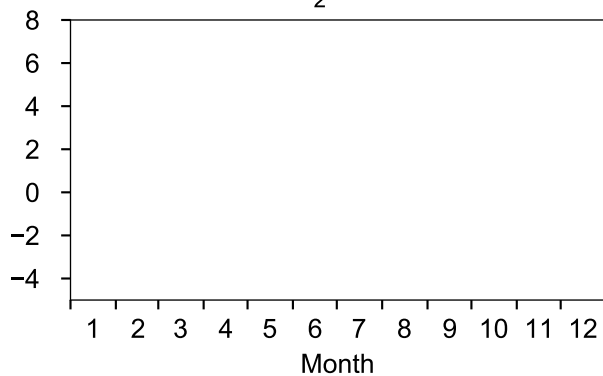
SiO₃ µmol/l



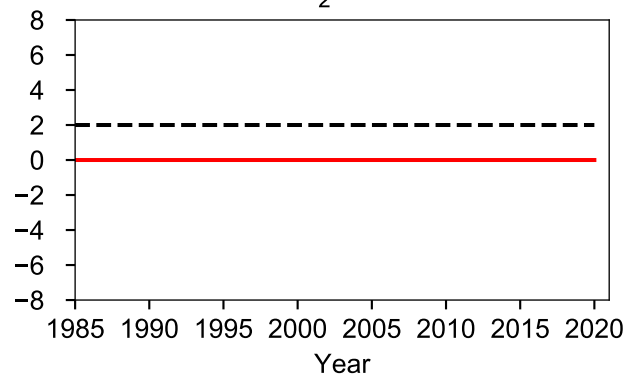
O₂ saturation %



O₂ ml/l

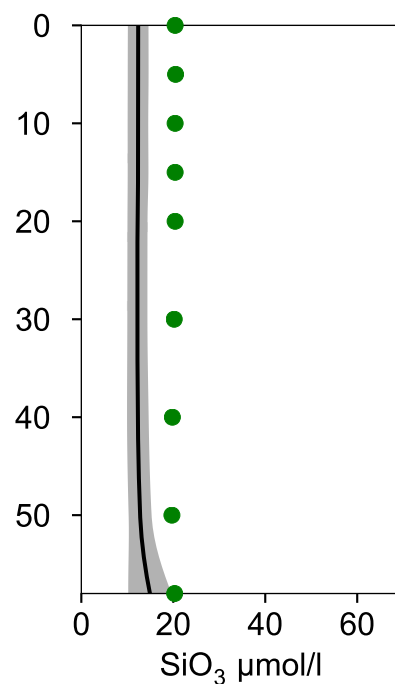
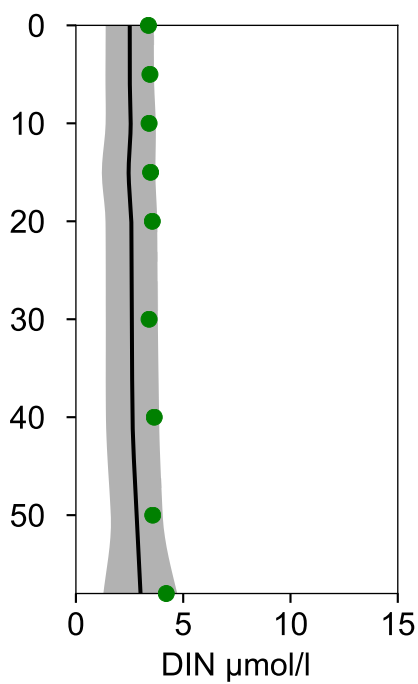
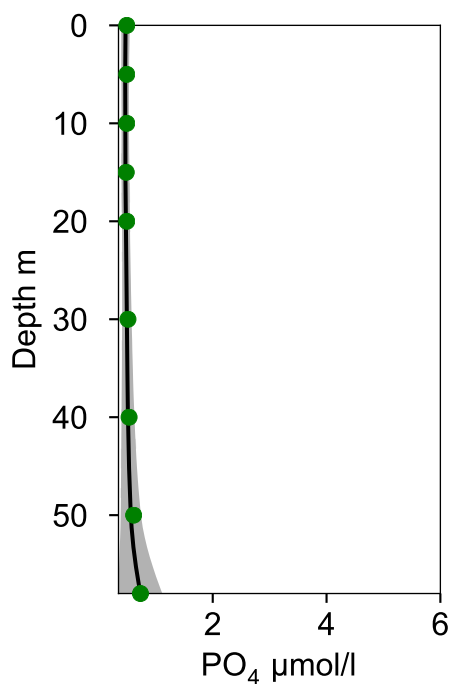
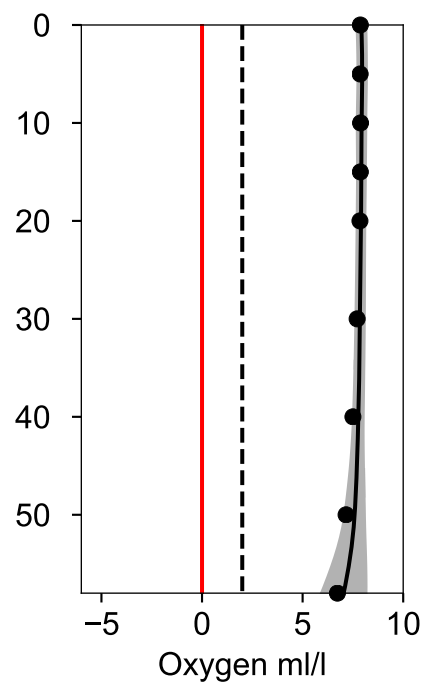
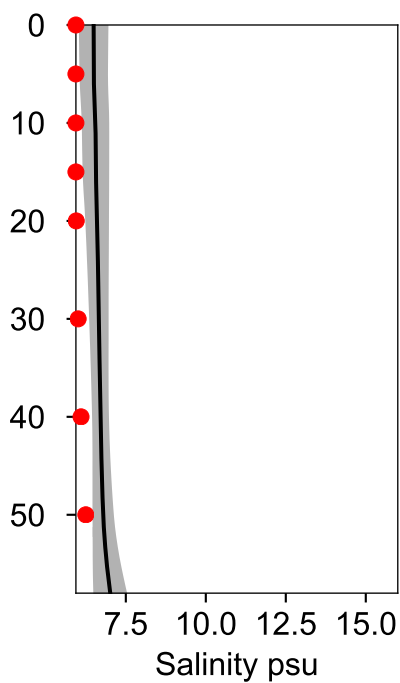
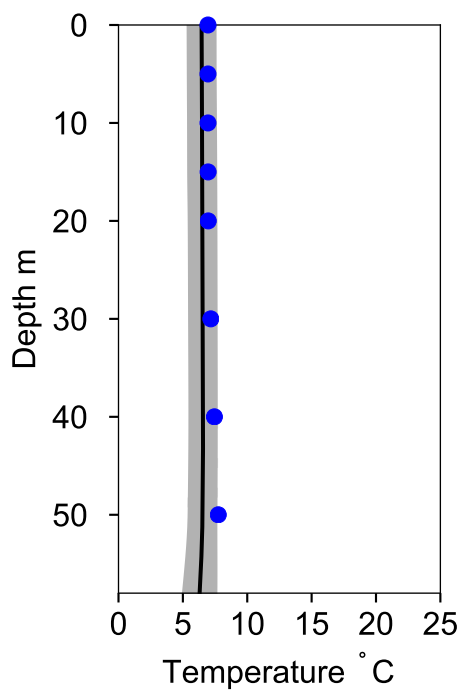


O₂ ml/l



Vertical profiles TRÖSKELN ÅLANDS HAV December

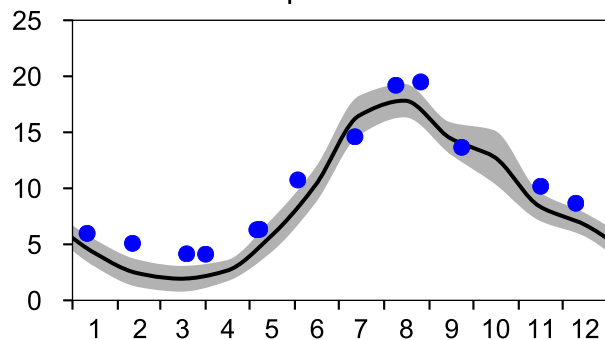
— Mean 2001-2015 St.Dev. • 2020-12-10



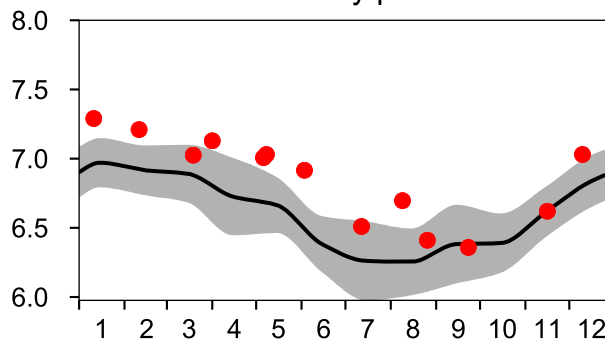
STATION BY29 / LL19 SURFACE WATER (0-10 m)

Annual Cycles

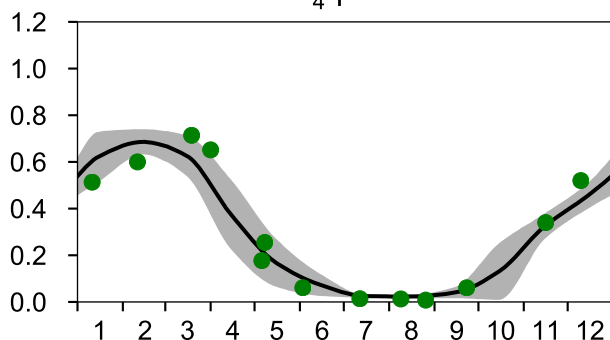
— Mean 2001-2015
Temperature °C



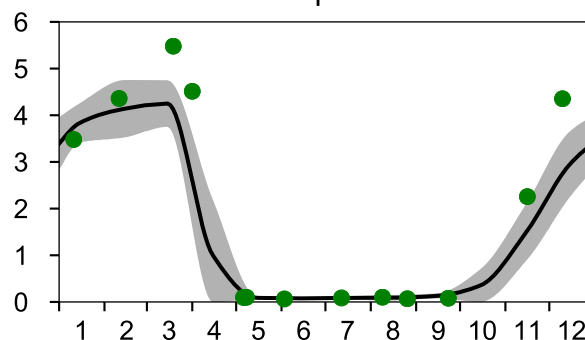
— St.Dev. • 2020
Salinity psu



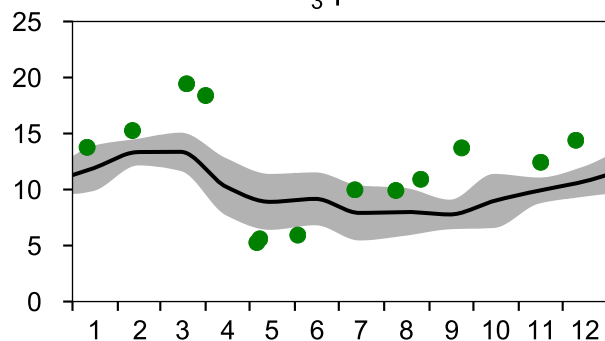
PO₄ µmol/l



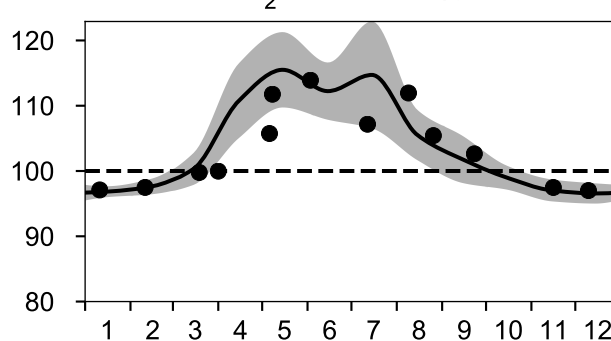
DIN µmol/l



SiO₃ µmol/l

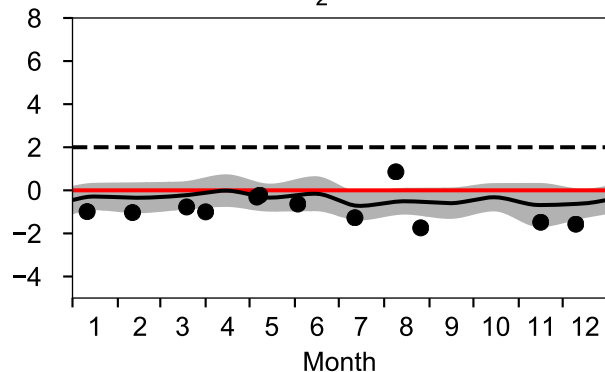


O₂ saturation %

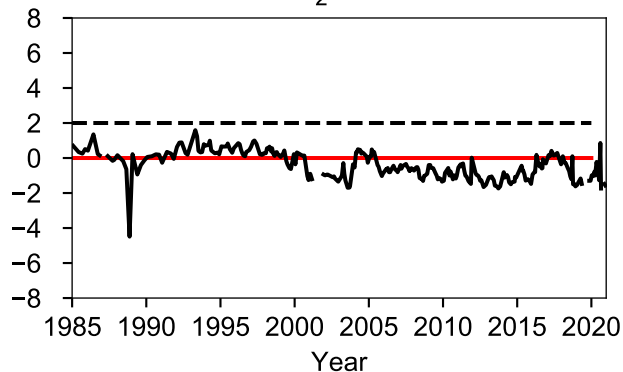


OXYGEN IN BOTTOM WATER (depth >= 150 m)

O₂ ml/l

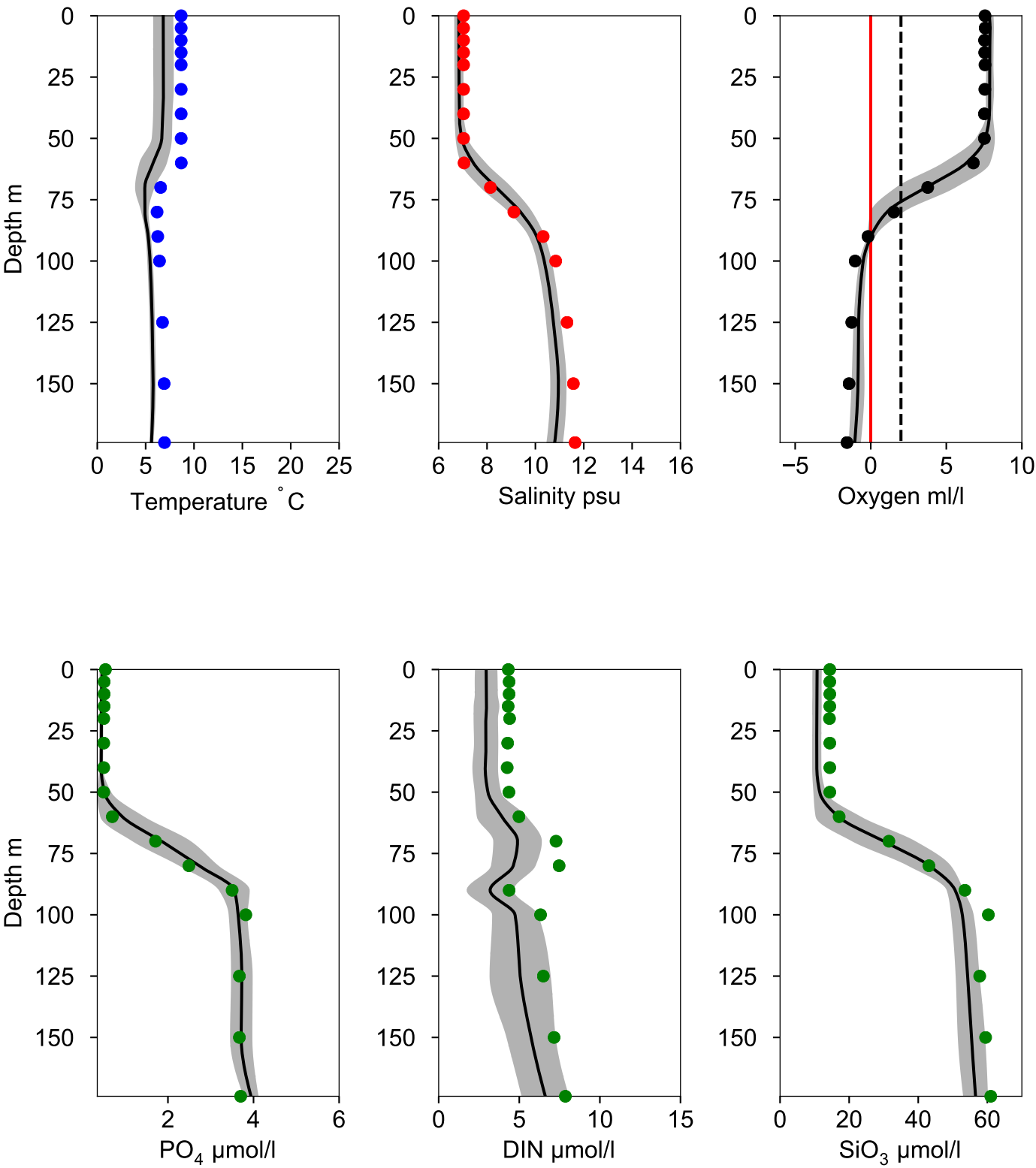


O₂ ml/l



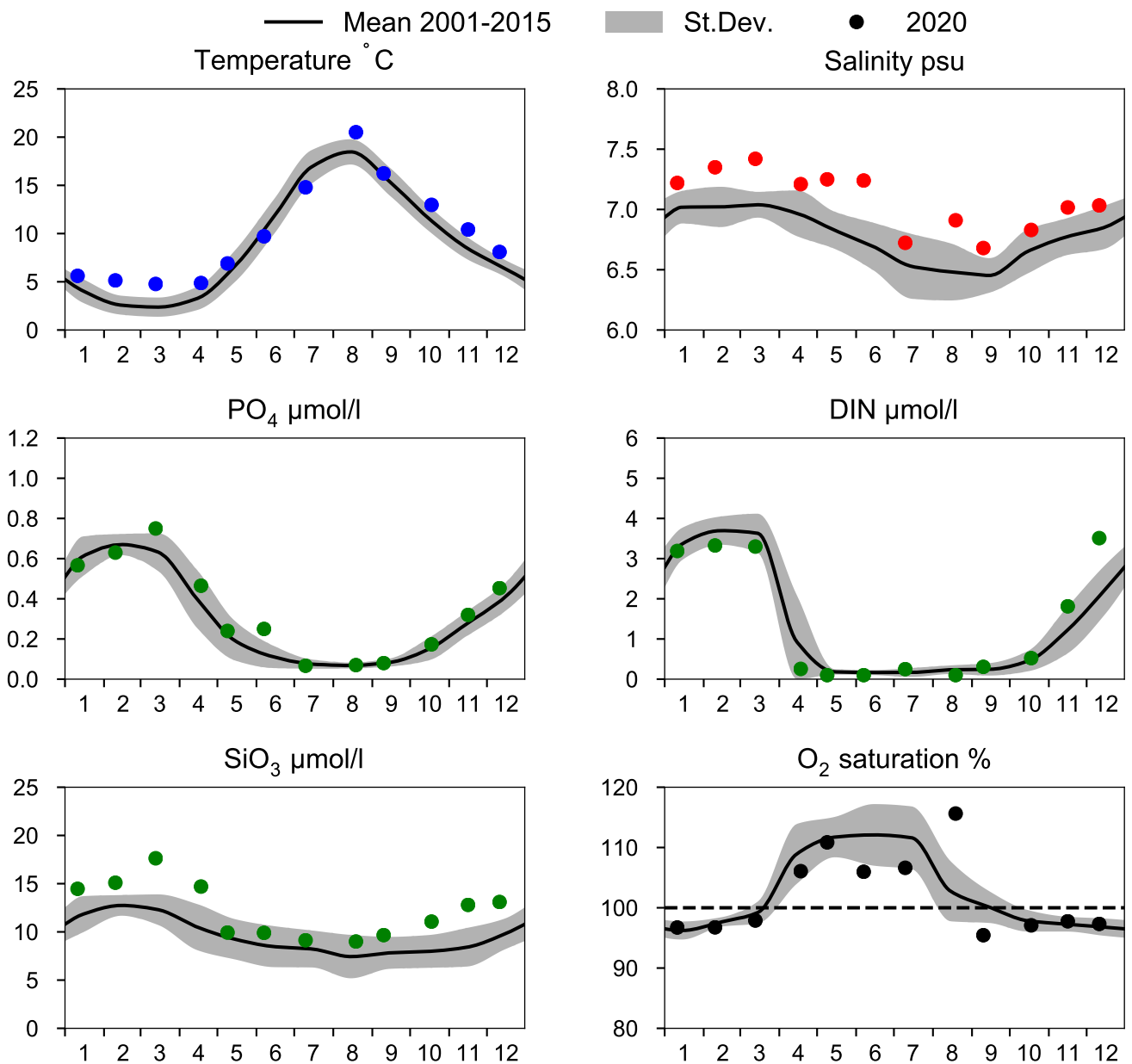
Vertical profiles BY29 / LL19
December

— Mean 2001-2015 St.Dev. • 2020-12-10

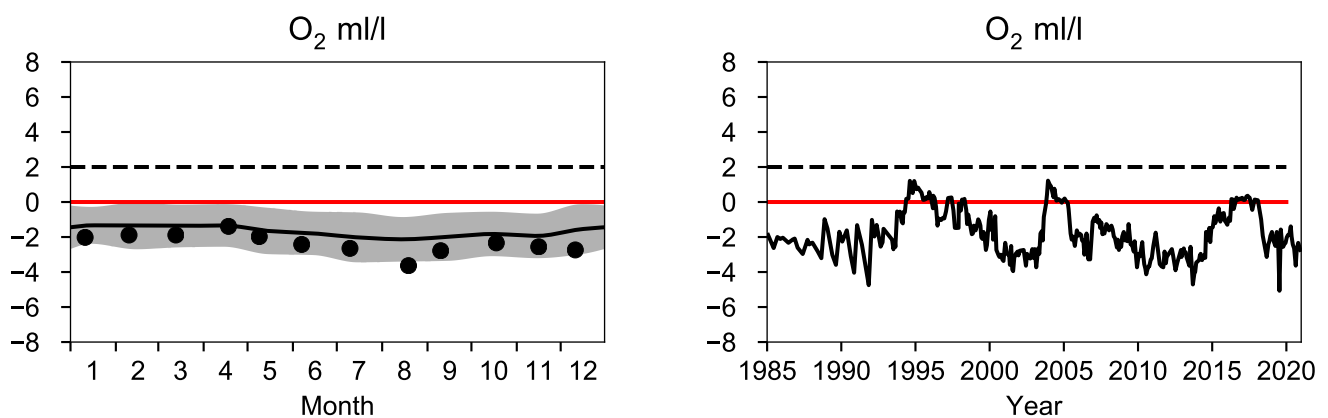


STATION BY20 FÅRÖDJ SURFACE WATER (0-10 m)

Annual Cycles

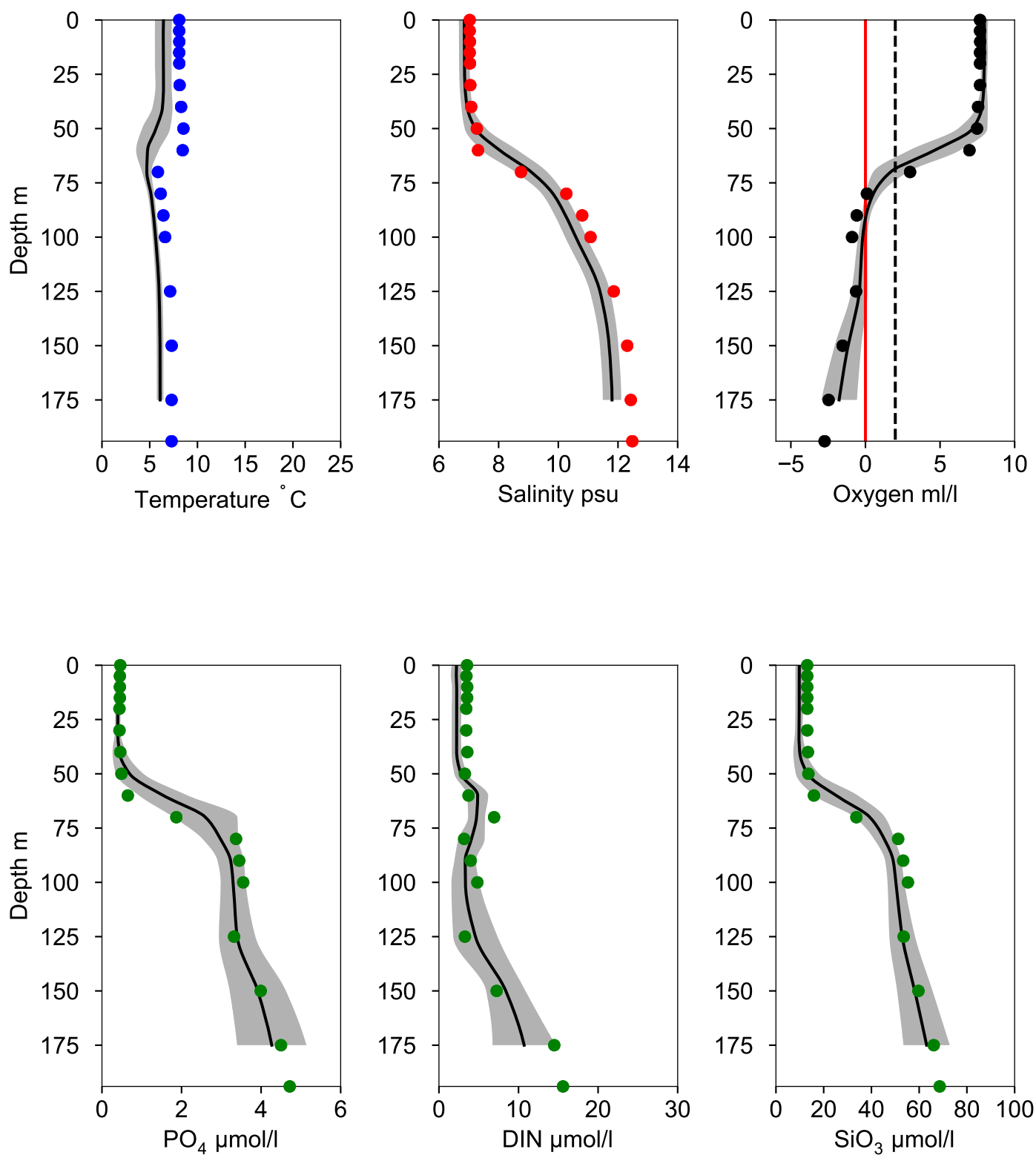


OXYGEN IN BOTTOM WATER (depth >= 175 m)



Vertical profiles BY20 FÅRÖDJ December

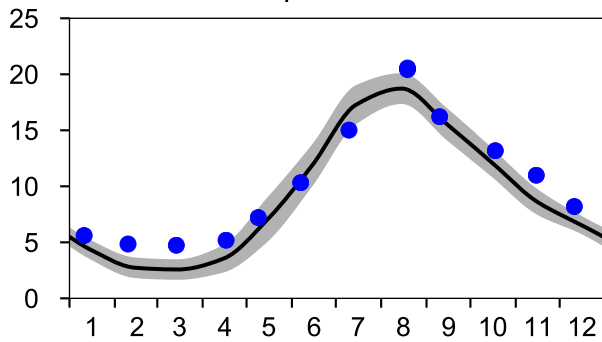
— Mean 2001-2015 St.Dev. • 2020-12-11



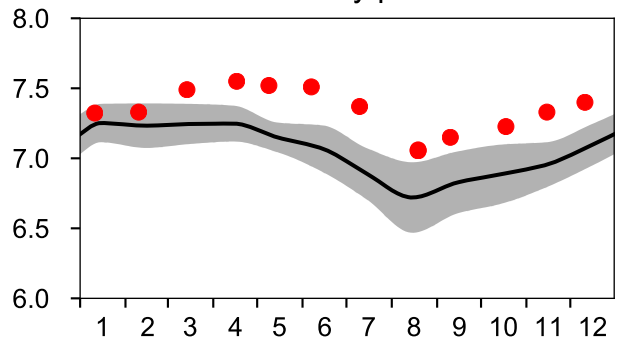
STATION BY15 GOTLANDSDJ SURFACE WATER (0-10 m)

Annual Cycles

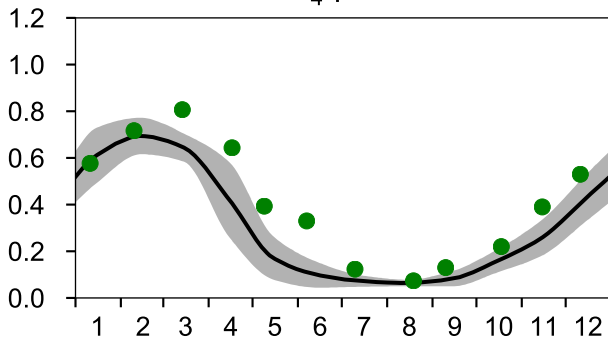
— Mean 2001-2015
Temperature °C



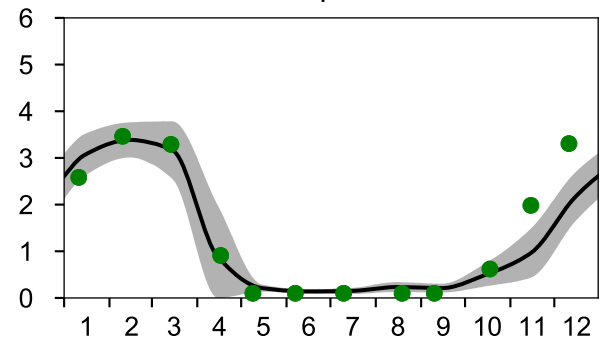
— St.Dev. • 2020
Salinity psu



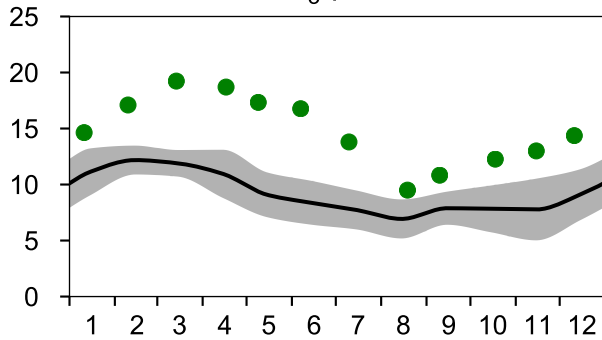
PO₄ µmol/l



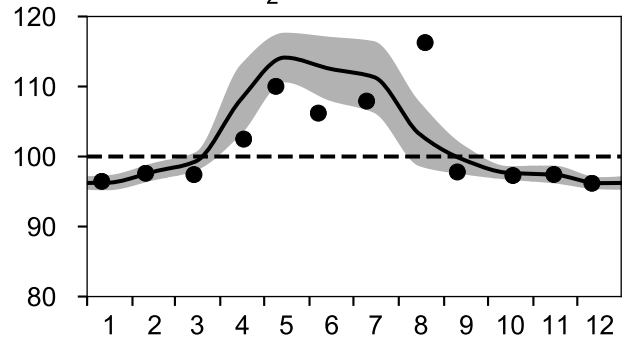
DIN µmol/l



SiO₃ µmol/l

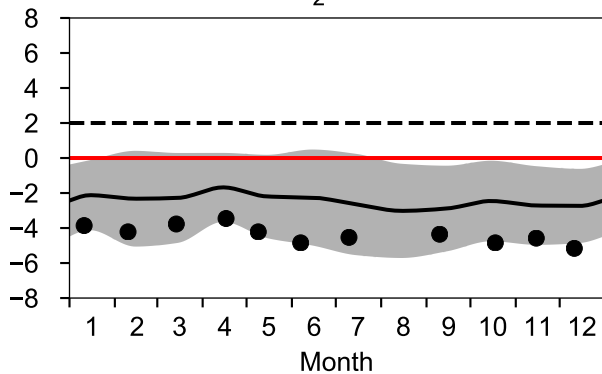


O₂ saturation %

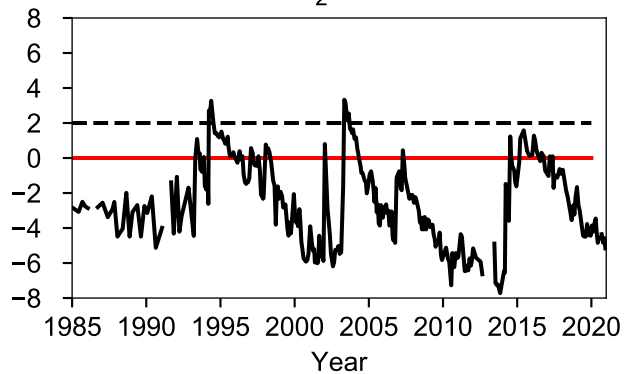


OXYGEN IN BOTTOM WATER (depth >= 225 m)

O₂ ml/l

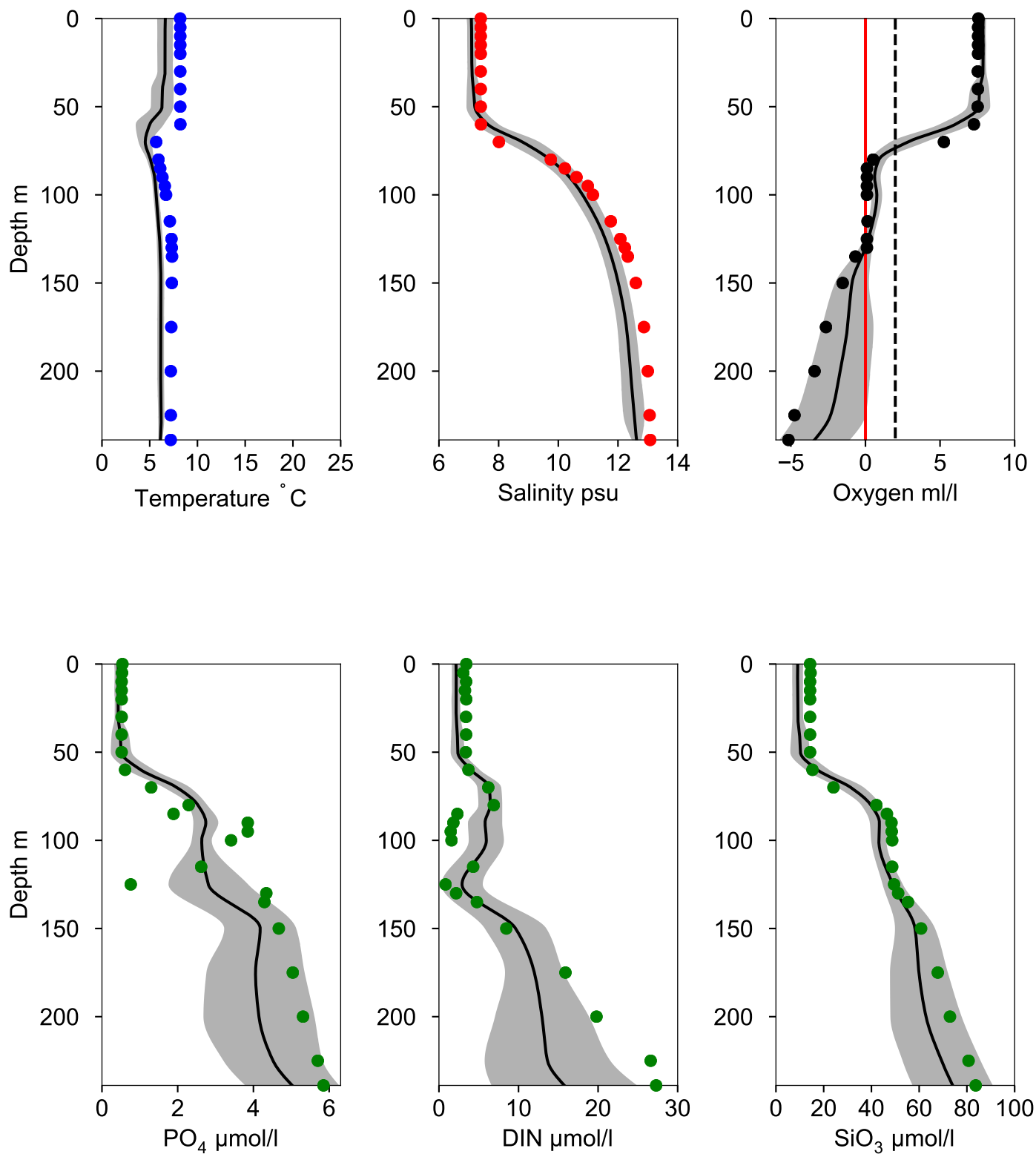


O₂ ml/l



Vertical profiles BY15 GOTLANDSDJ December

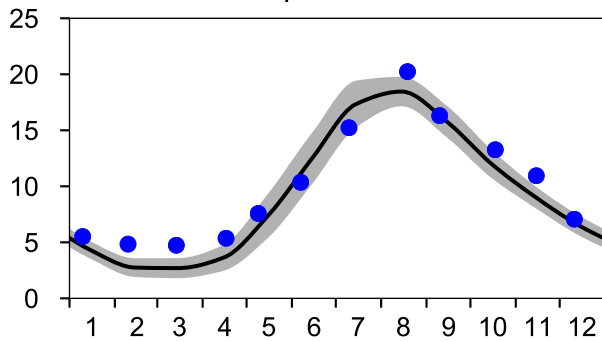
— Mean 2001-2015 St.Dev. • 2020-12-11



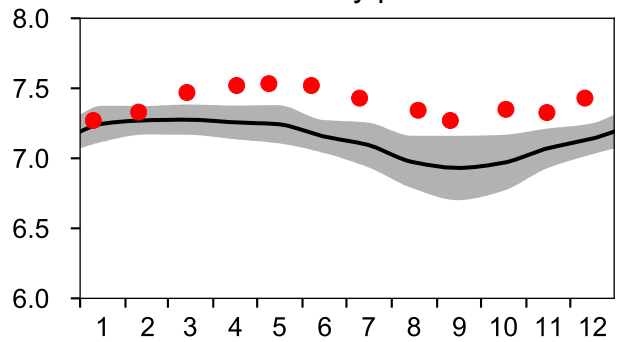
STATION BY10 SURFACE WATER (0-10 m)

Annual Cycles

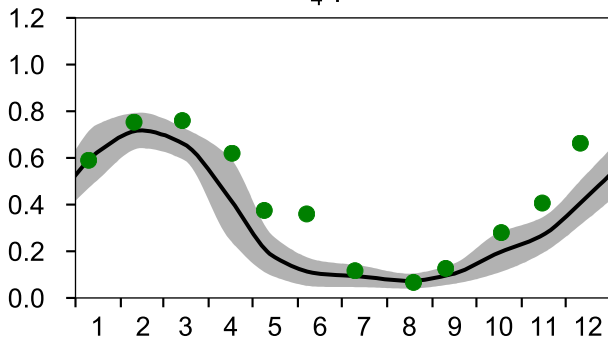
— Mean 2001-2015
Temperature °C



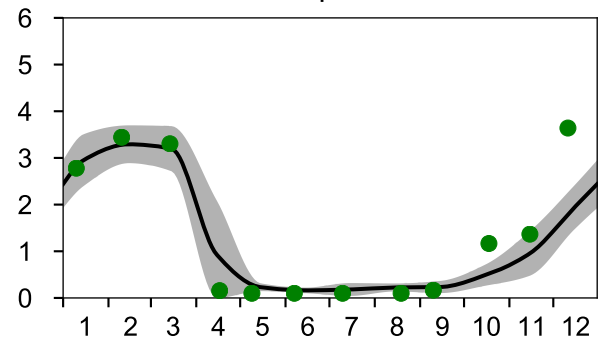
— St.Dev. ● 2020
Salinity psu



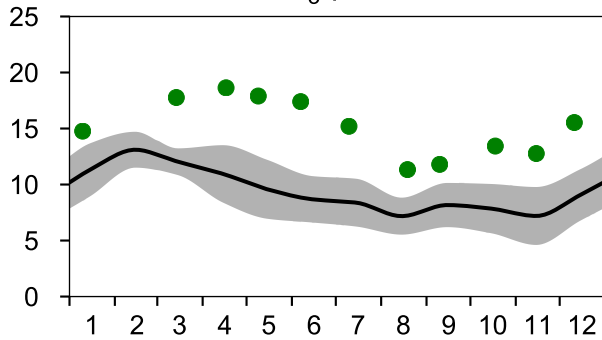
PO₄ µmol/l



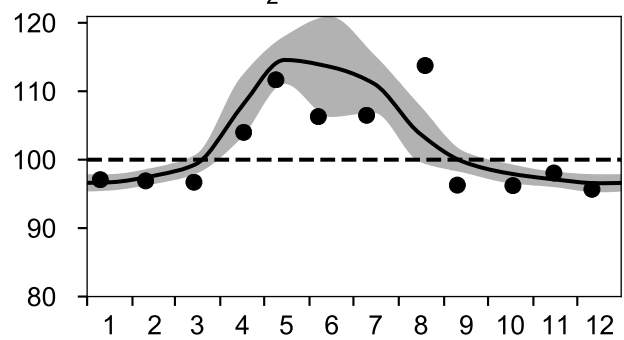
DIN µmol/l



SiO₃ µmol/l

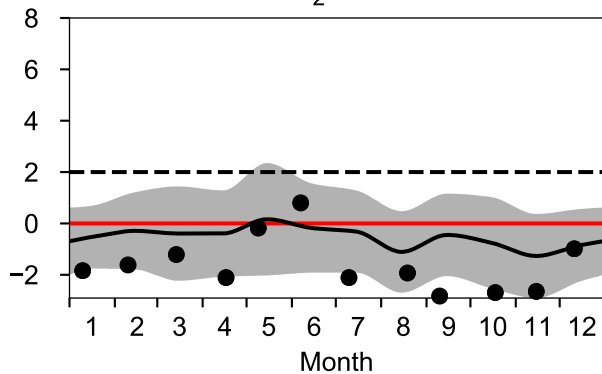


O₂ saturation %

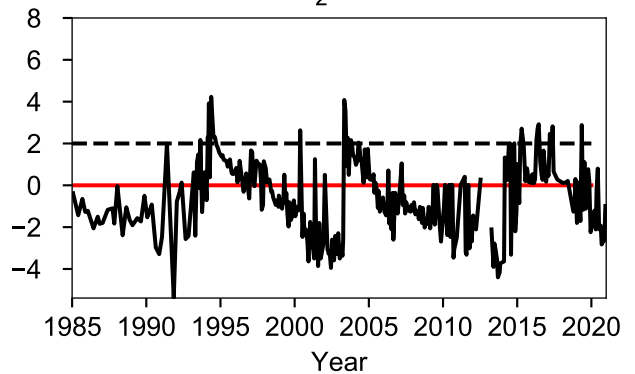


OXYGEN IN BOTTOM WATER (depth >= 125 m)

O₂ ml/l

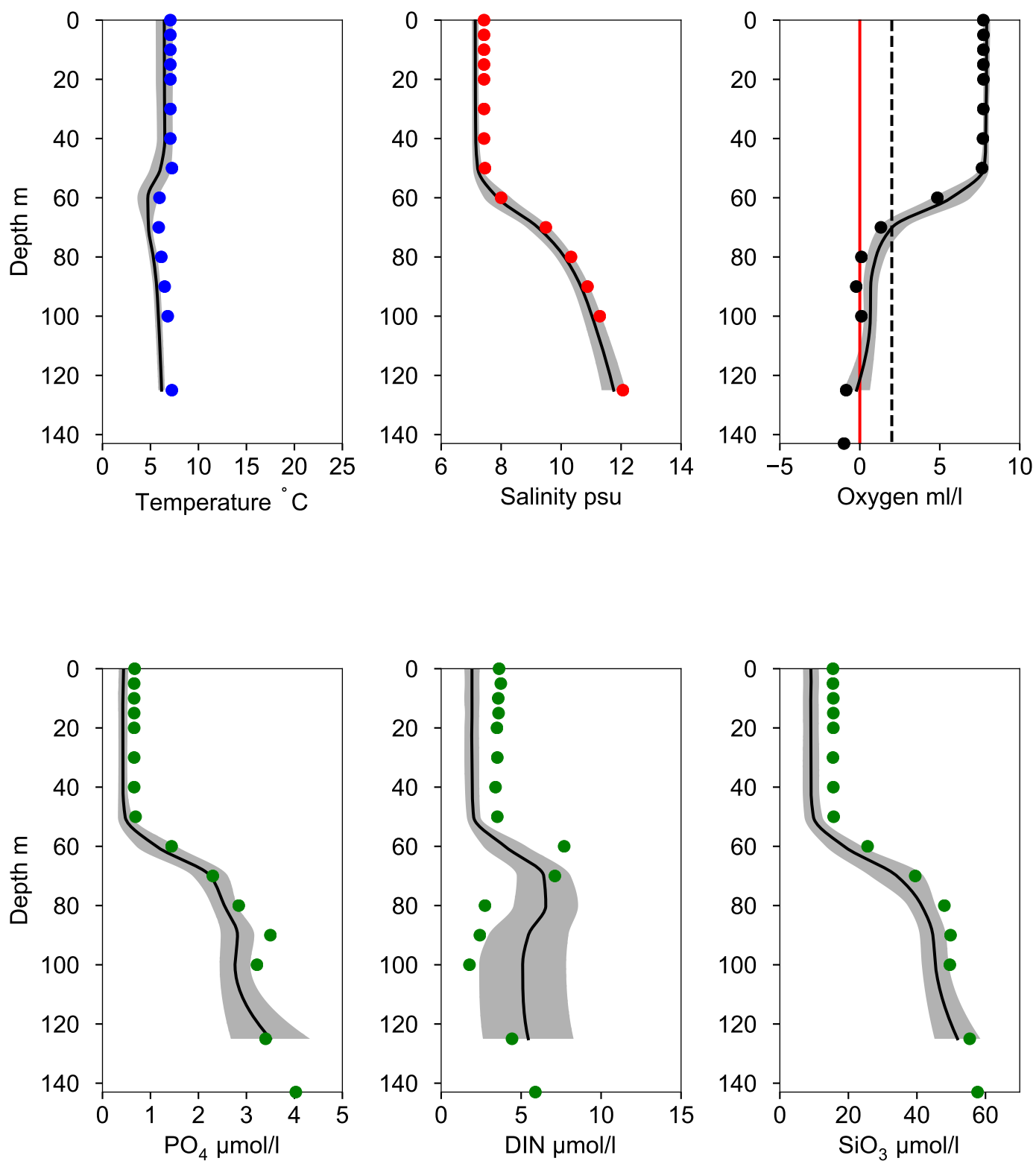


O₂ ml/l



Vertical profiles BY10 December

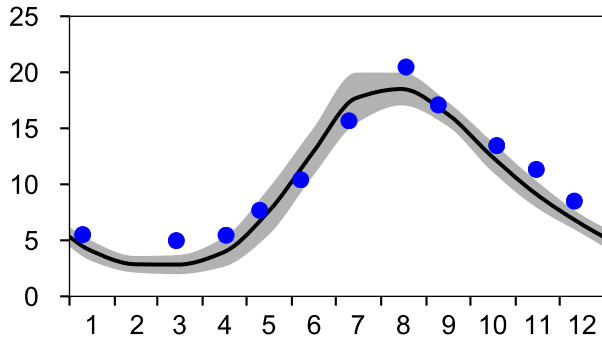
— Mean 2001-2015 St.Dev. • 2020-12-11



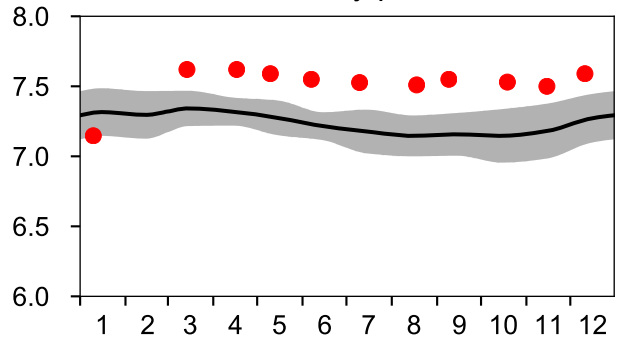
STATION BCS III-10 SURFACE WATER (0-10 m)

Annual Cycles

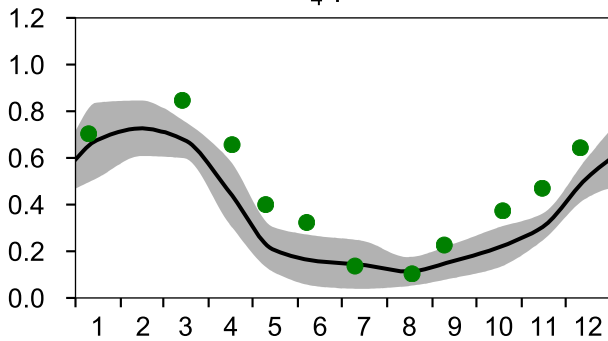
— Mean 2001-2015
Temperature °C



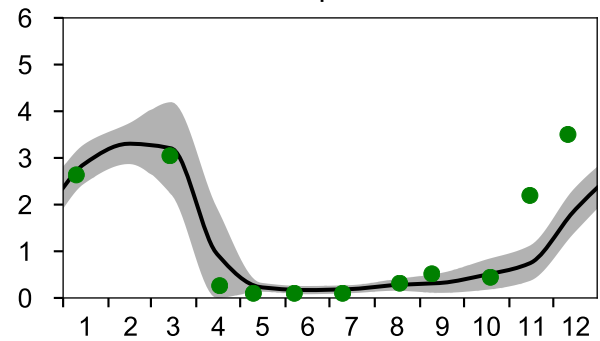
St.Dev. ● 2020
Salinity psu



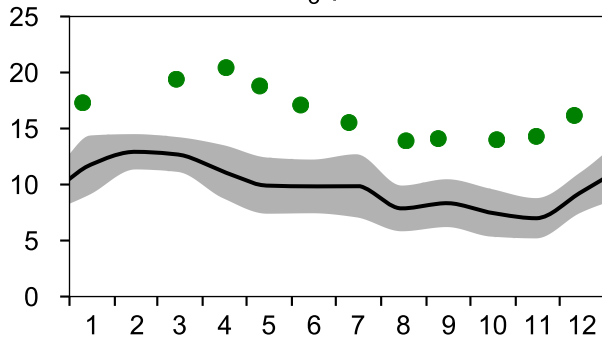
PO₄ µmol/l



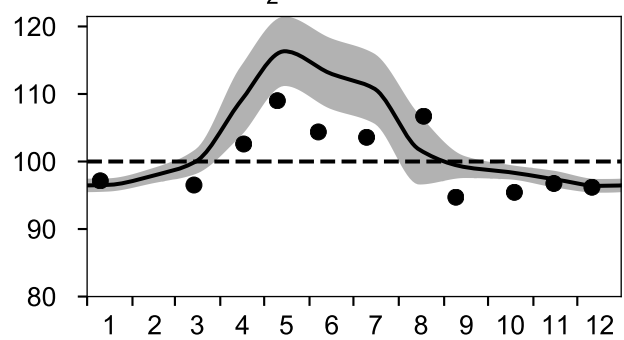
DIN µmol/l



SiO₃ µmol/l

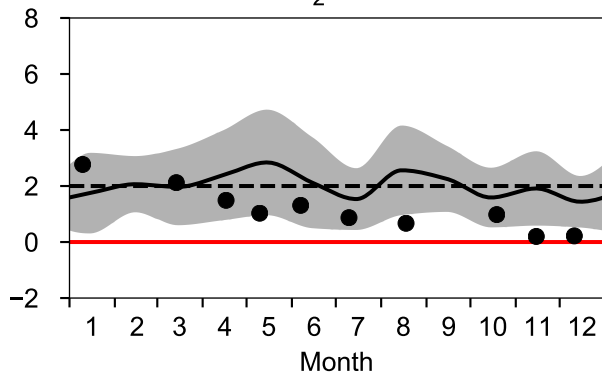


O₂ saturation %

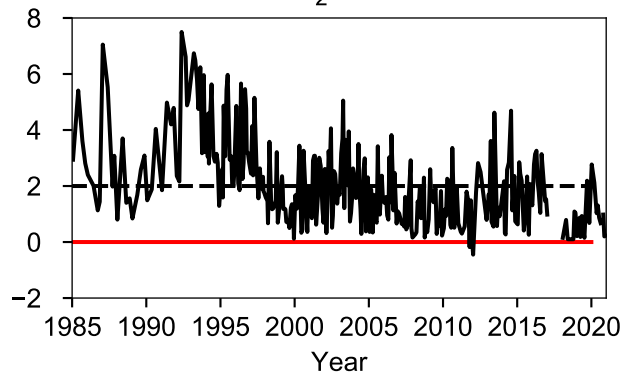


OXYGEN IN BOTTOM WATER (depth >= 80 m)

O₂ ml/l

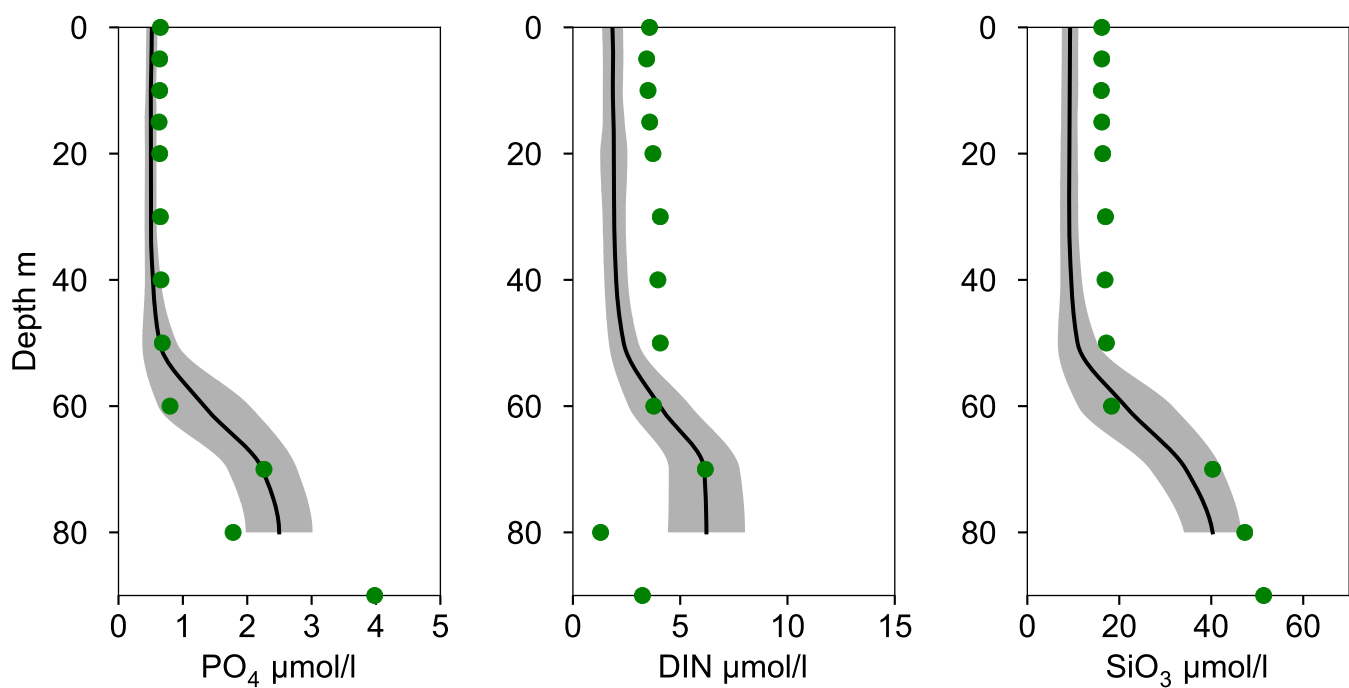
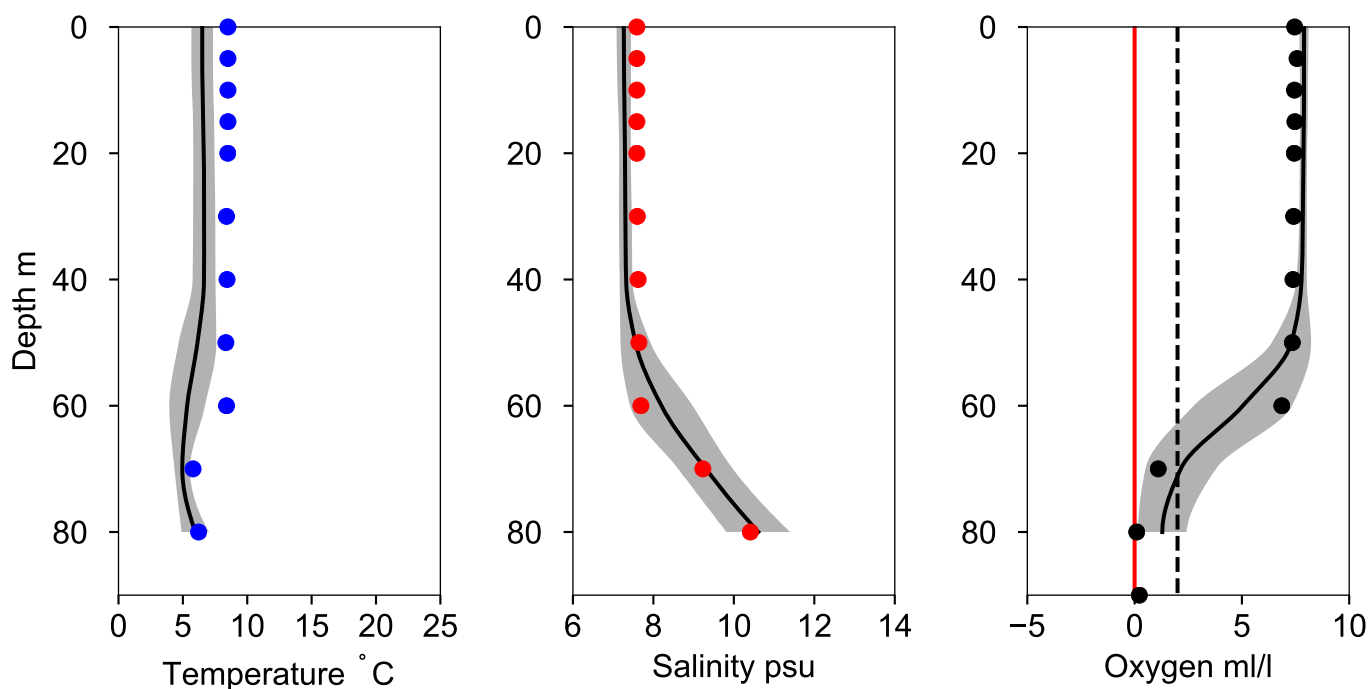


O₂ ml/l



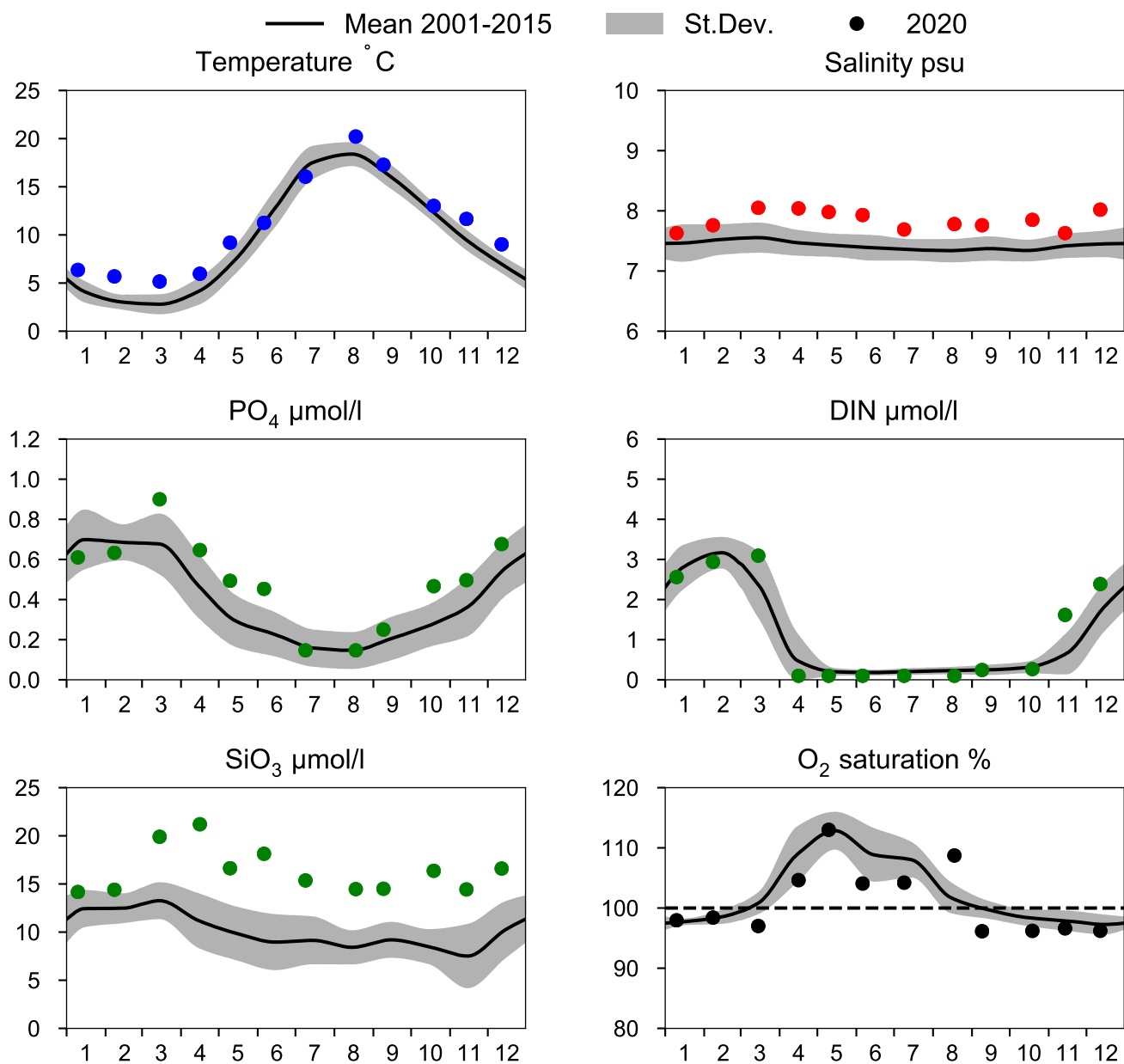
Vertical profiles BCS III-10 December

— Mean 2001-2015 St.Dev. • 2020-12-11

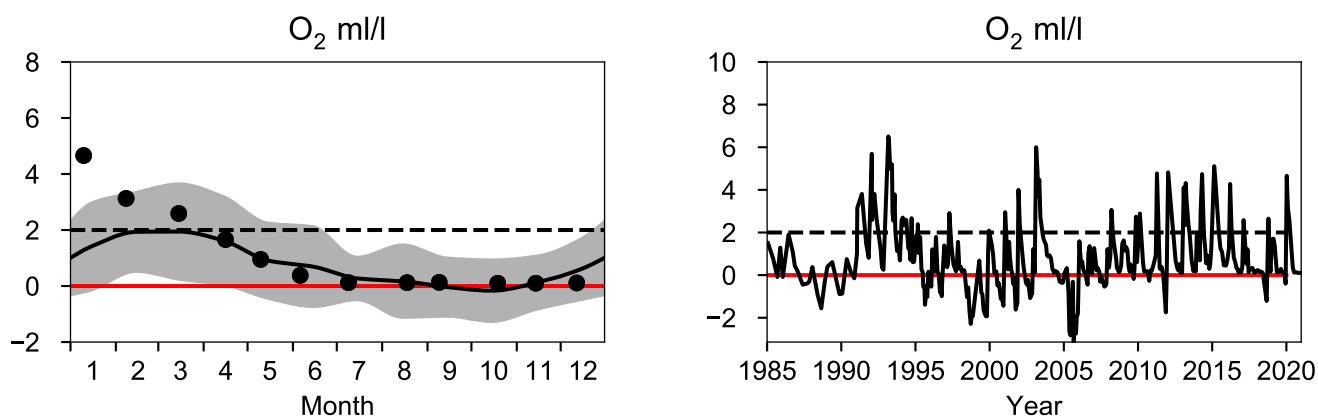


STATION BY5 BORNHOLMSDJ SURFACE WATER (0-10 m)

Annual Cycles

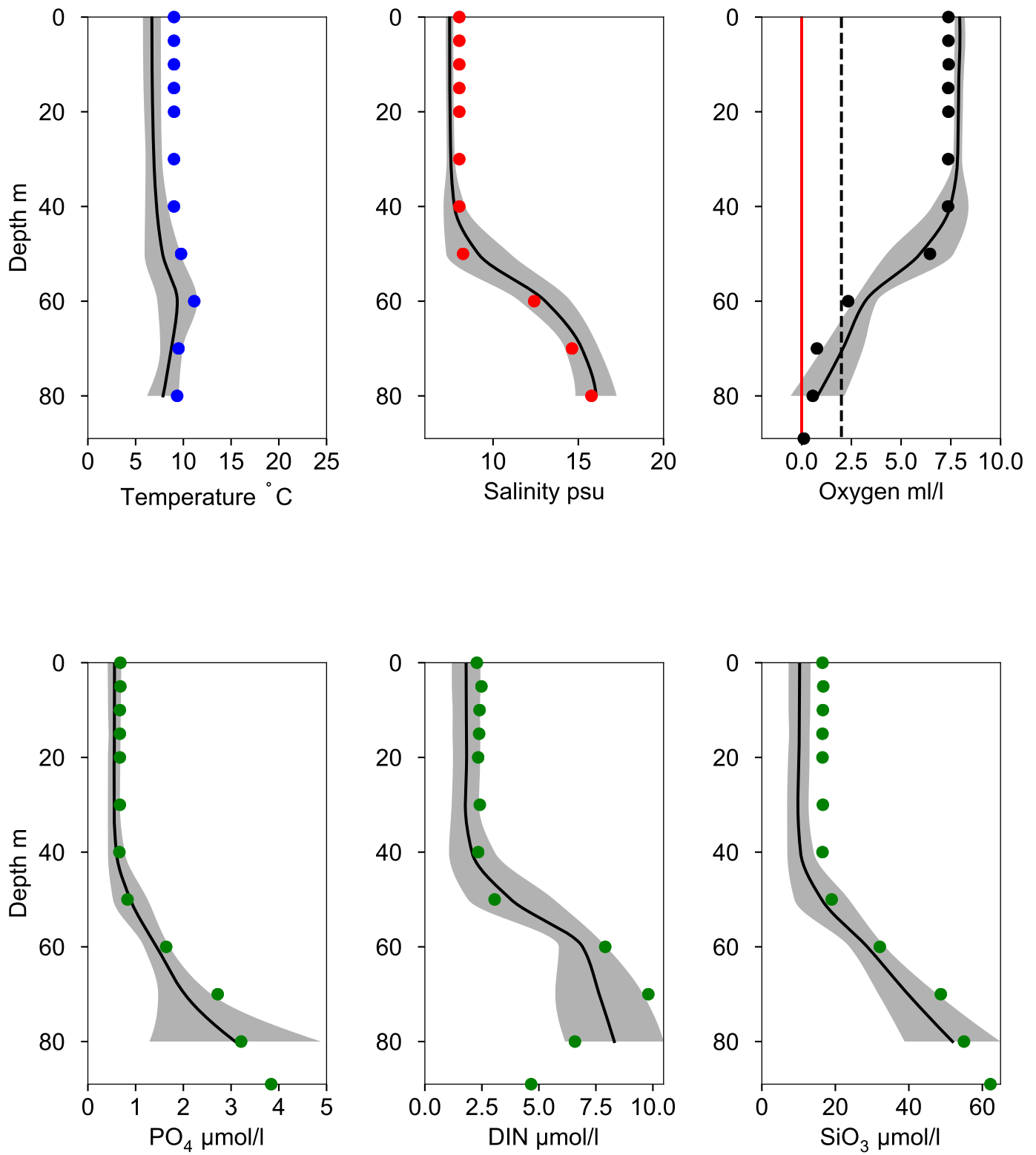


OXYGEN IN BOTTOM WATER (depth >= 80 m)



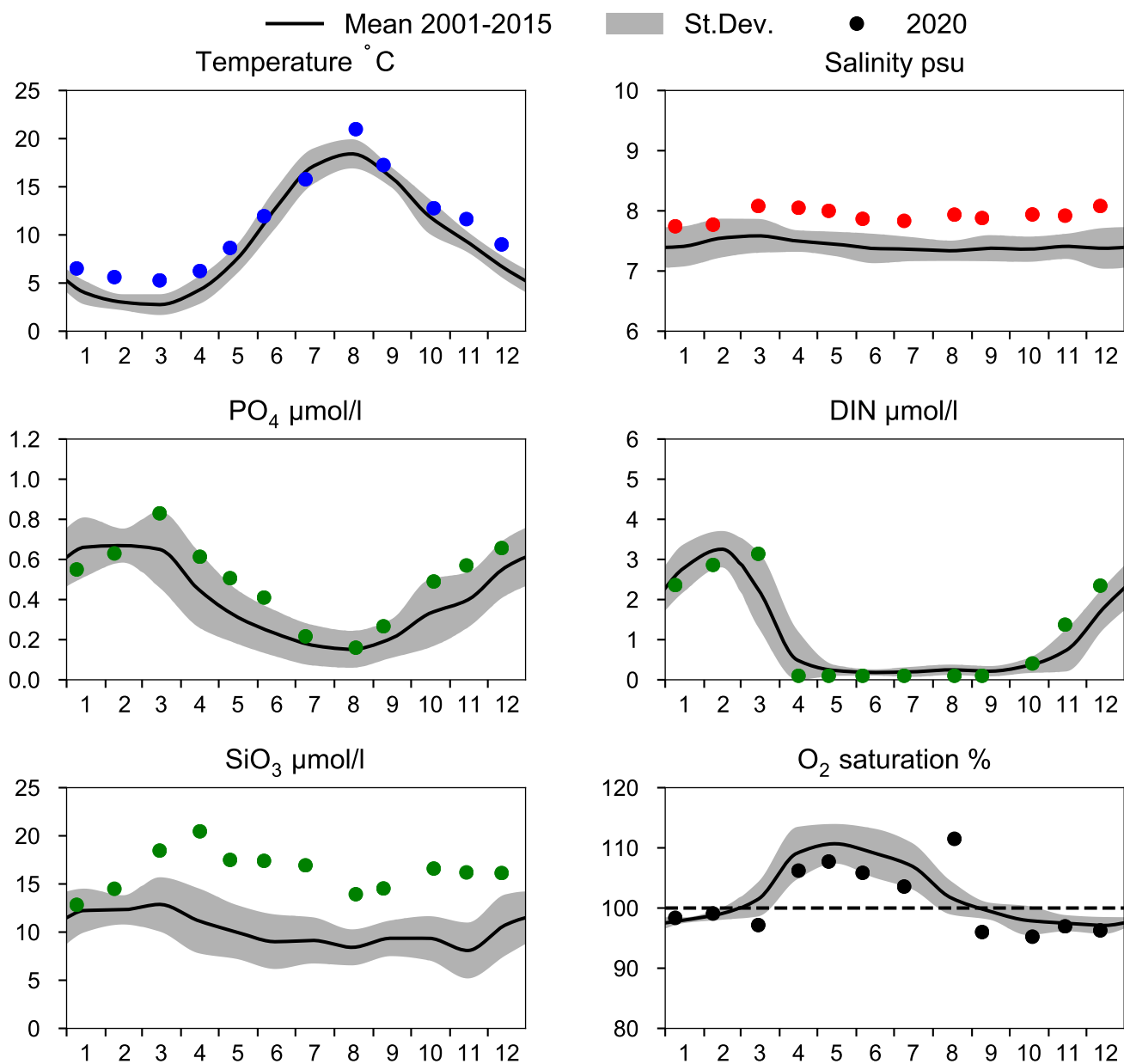
Vertical profiles BY5 BORNHOLMSDJ December

— Mean 2001-2015 St.Dev. • 2020-12-12

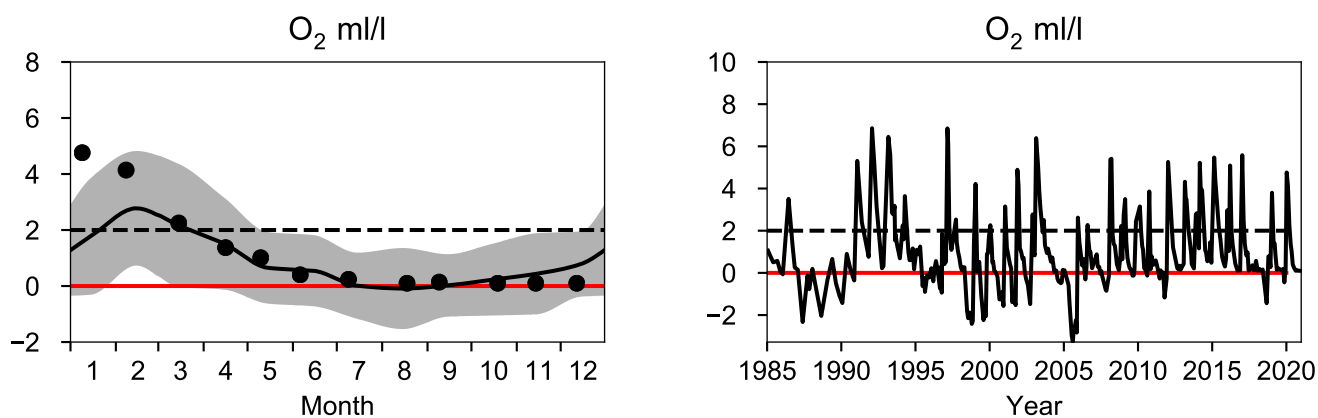


STATION BY4 CHRISTIANSÖ SURFACE WATER (0-10 m)

Annual Cycles

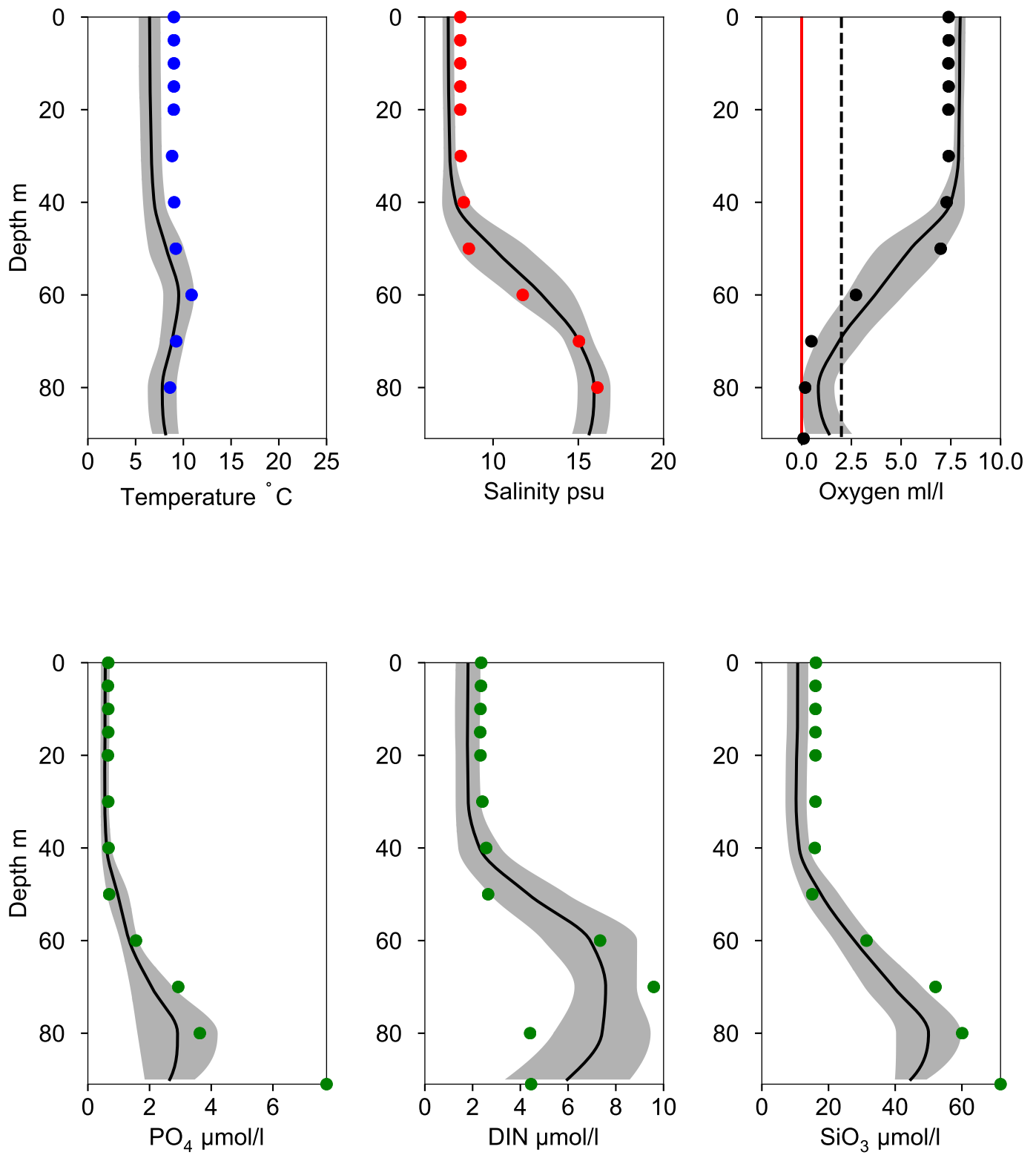


OXYGEN IN BOTTOM WATER (depth >= 80 m)



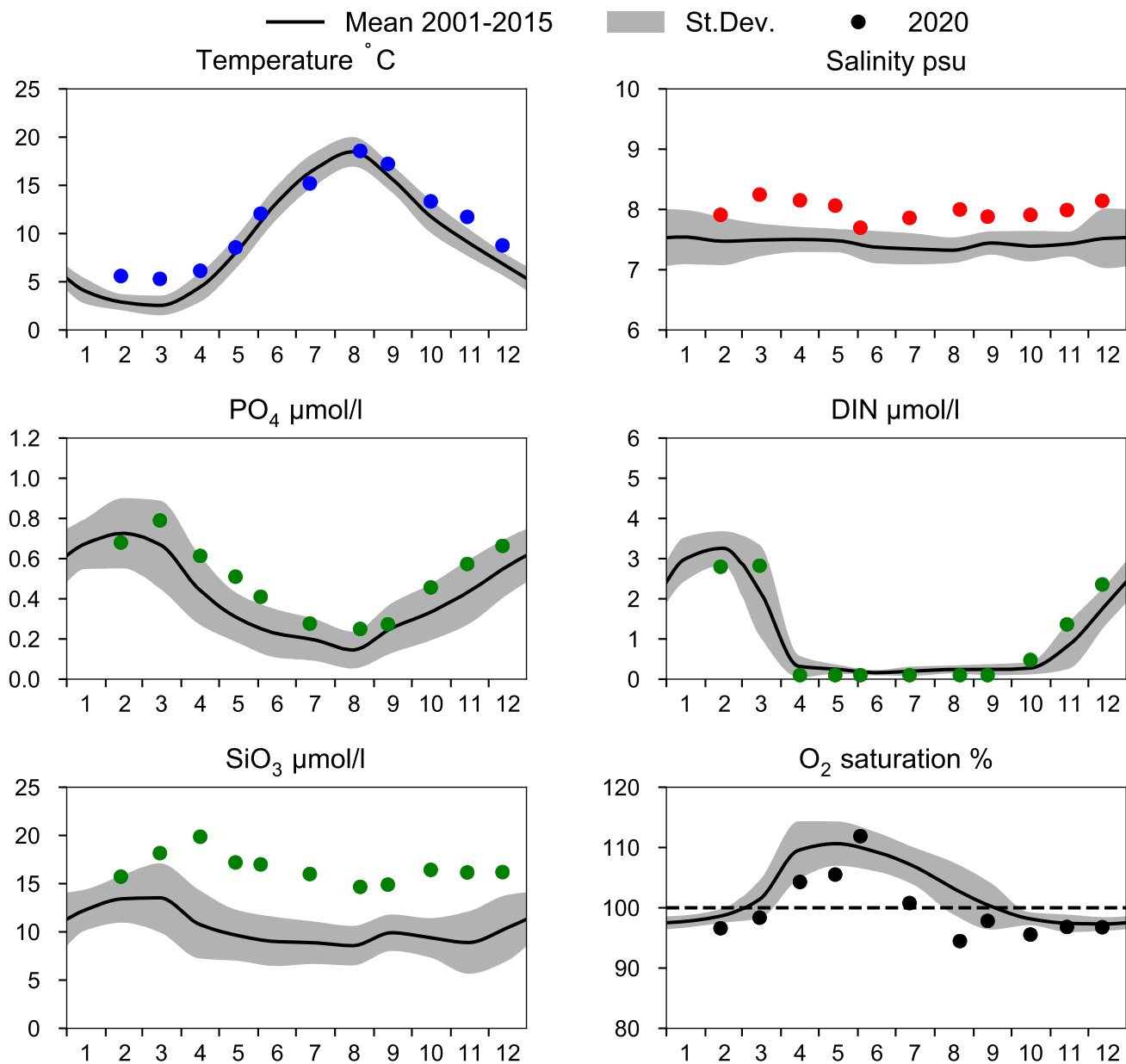
Vertical profiles BY4 CHRISTIANSÖ December

— Mean 2001-2015 St.Dev. • 2020-12-12

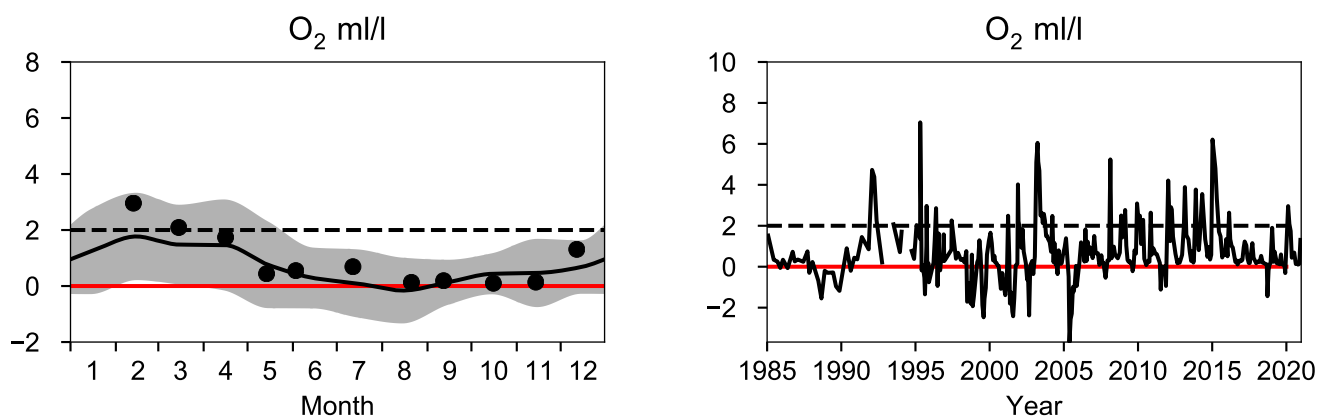


STATION HANÖBUKTEN SURFACE WATER (0-10 m)

Annual Cycles

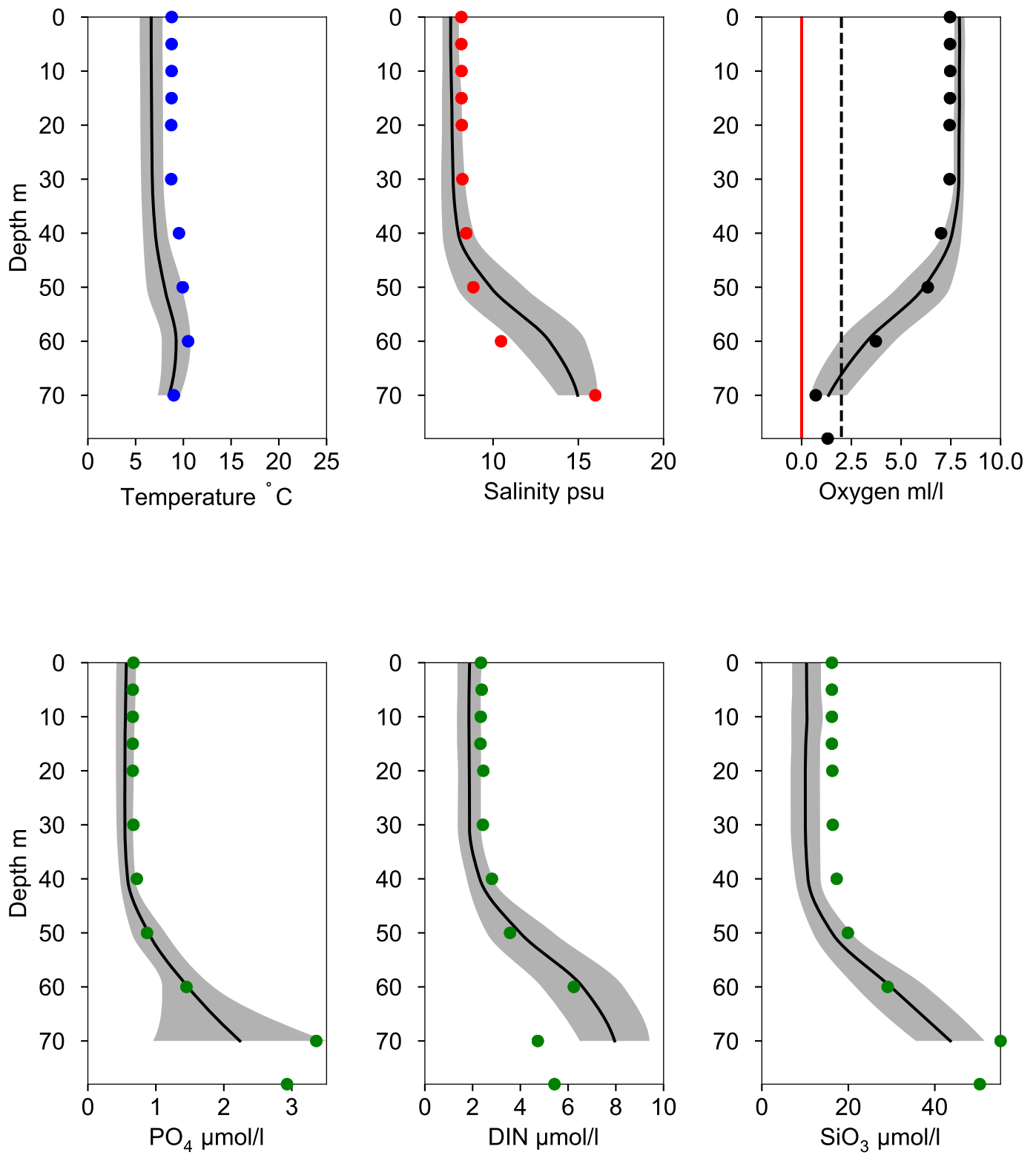


OXYGEN IN BOTTOM WATER (depth >= 70 m)



Vertical profiles HANÖBUKTEN December

— Mean 2001-2015 St.Dev. • 2020-12-12



STATION BY2 ARKONA SURFACE WATER (0-10 m)

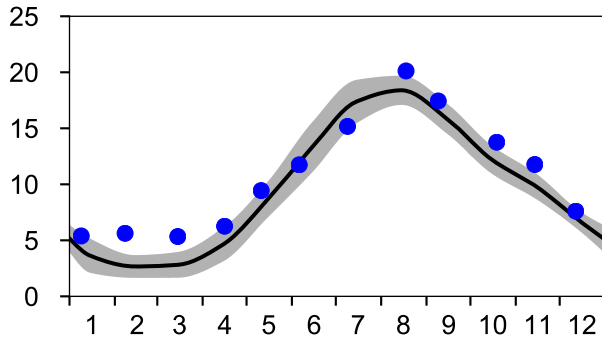
Annual Cycles

— Mean 2001-2015

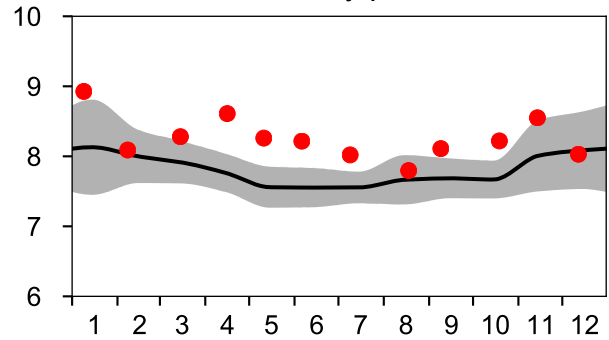
■ St.Dev.

● 2020

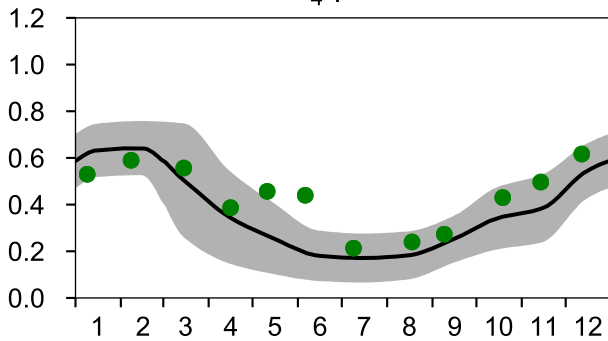
Temperature °C



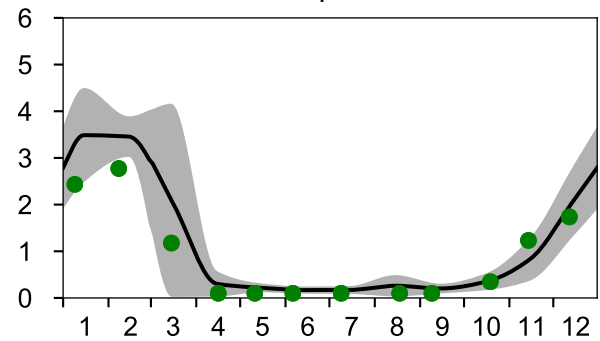
Salinity psu



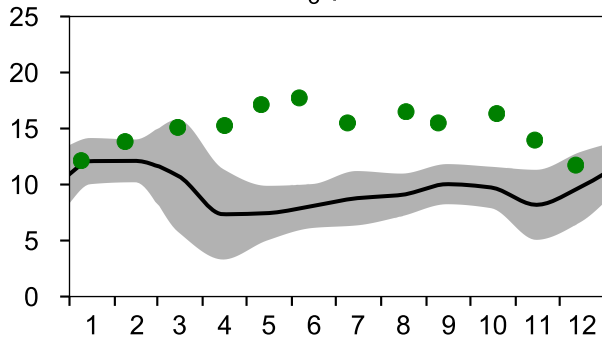
PO₄ µmol/l



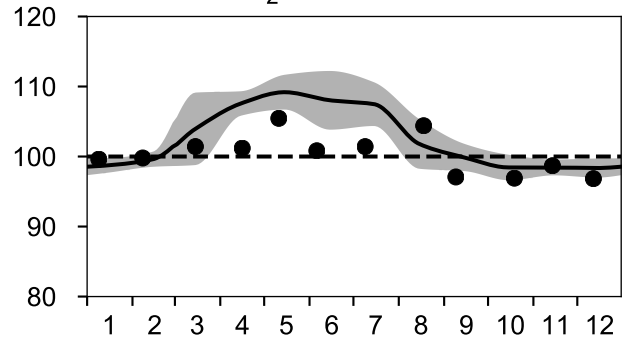
DIN µmol/l



SiO₃ µmol/l

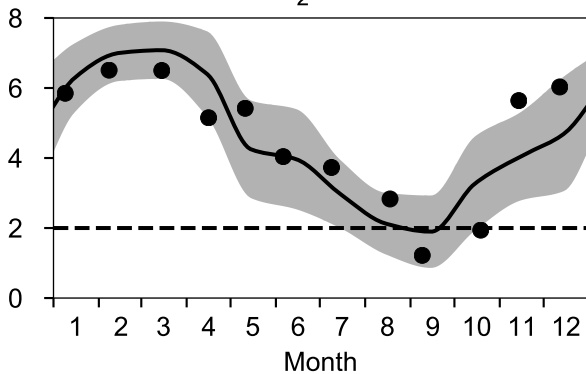


O₂ saturation %

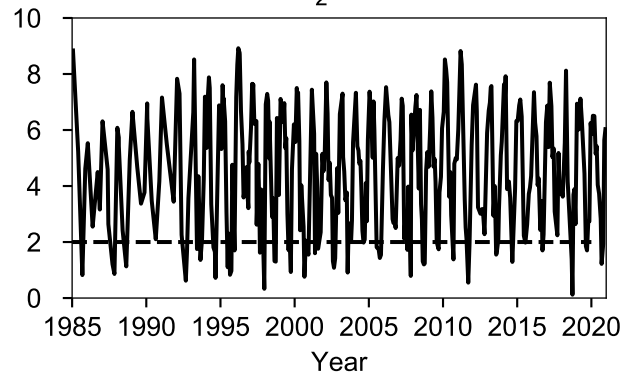


OXYGEN IN BOTTOM WATER (depth >= 40 m)

O₂ ml/l

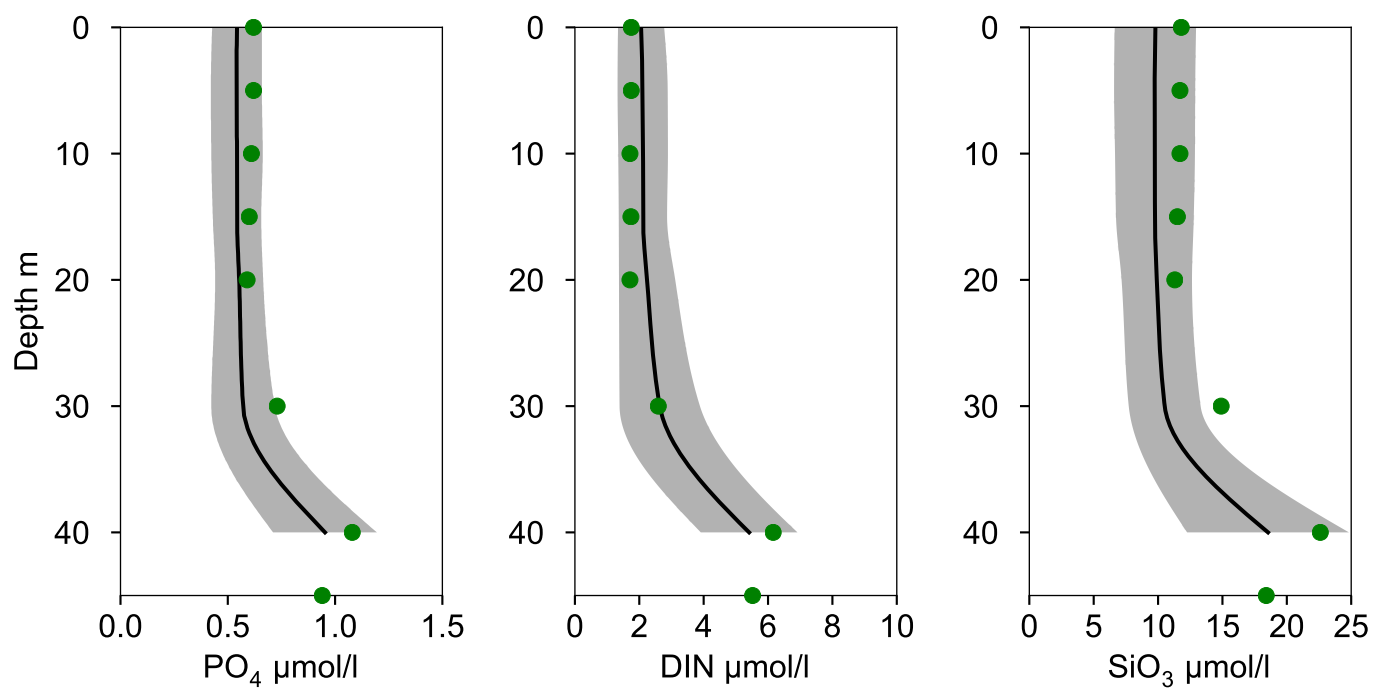
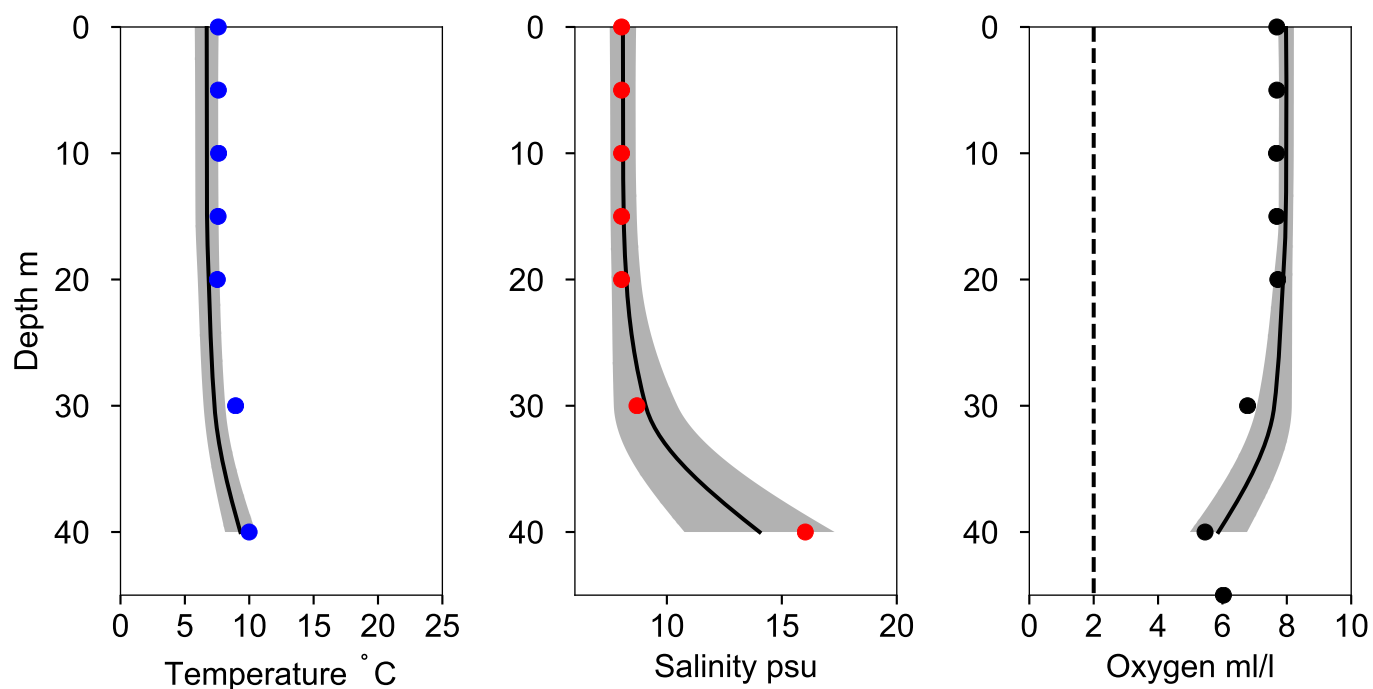


O₂ ml/l



Vertical profiles BY2 ARKONA December

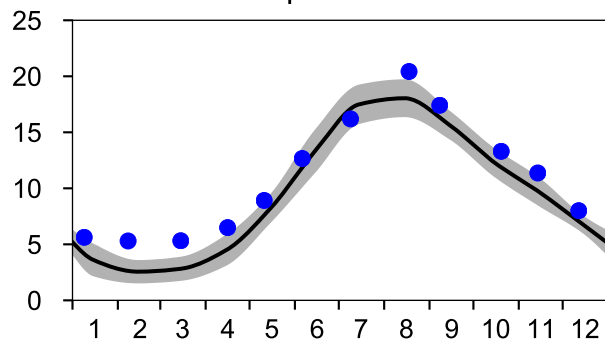
— Mean 2001-2015 St.Dev. • 2020-12-12



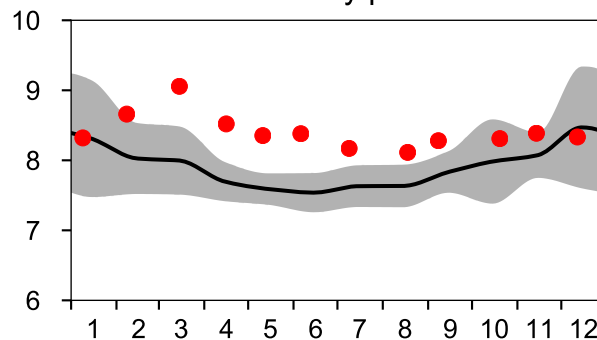
STATION BY1 SURFACE WATER (0-10 m)

Annual Cycles

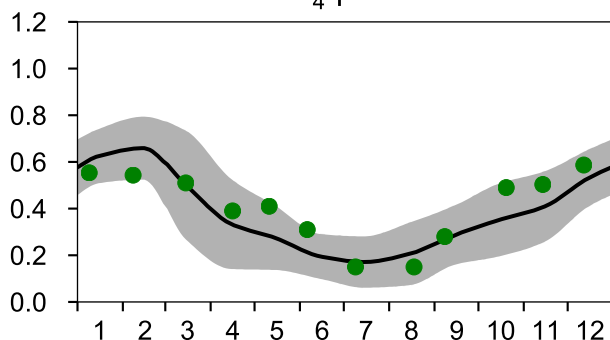
— Mean 2001-2015
Temperature °C



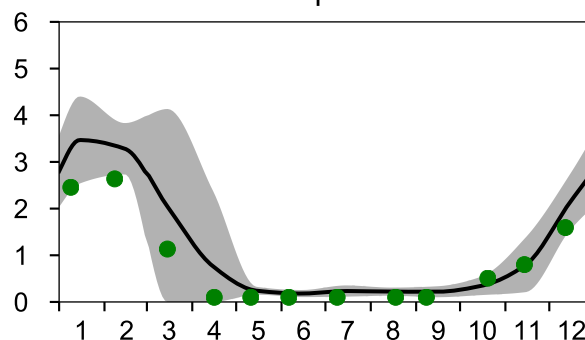
St.Dev. Salinity psu



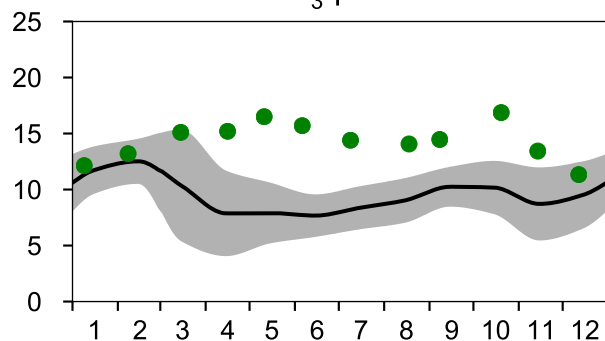
PO₄ µmol/l



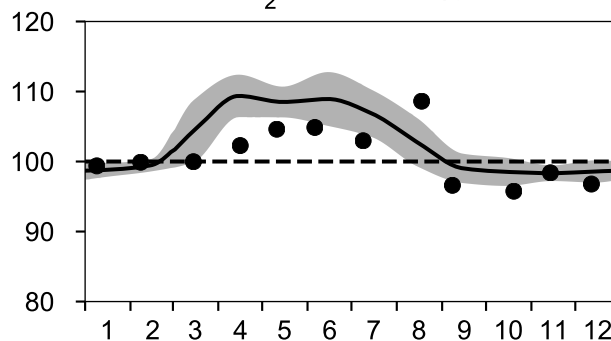
DIN µmol/l



SiO₃ µmol/l

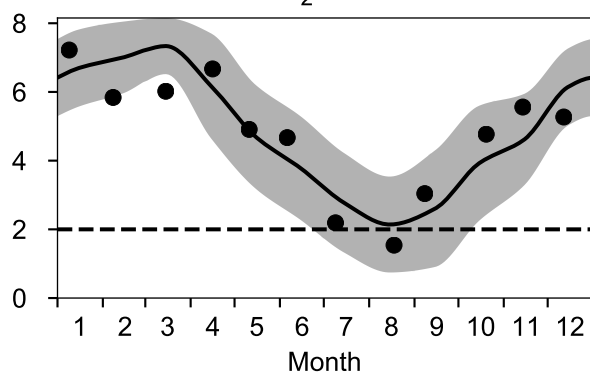


O₂ saturation %

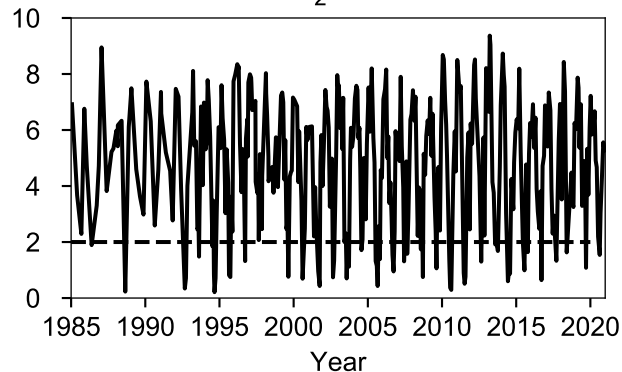


OXYGEN IN BOTTOM WATER (depth >= 40 m)

O₂ ml/l

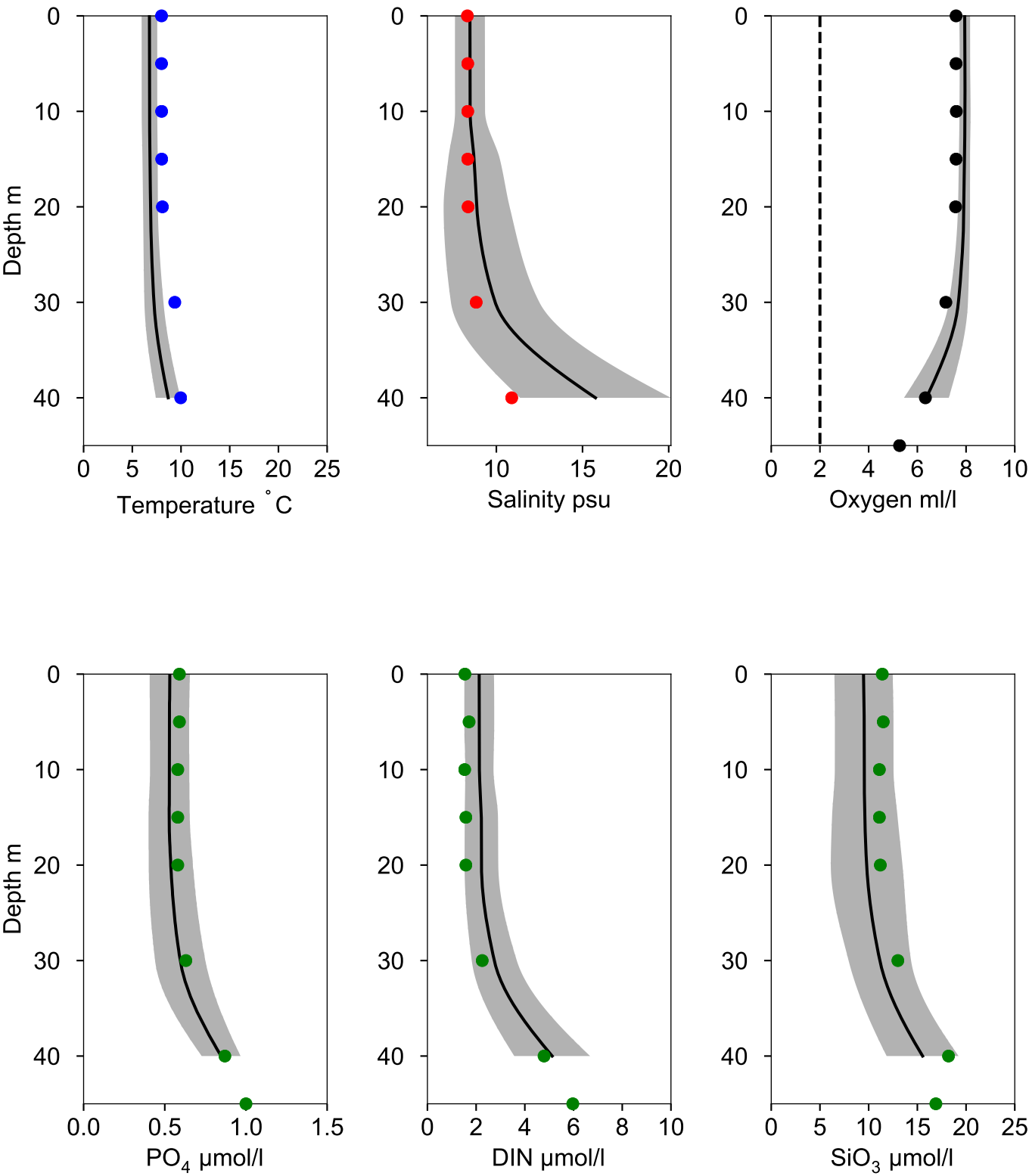


O₂ ml/l



Vertical profiles BY1
December

— Mean 2001-2015 St.Dev. • 2020-12-12



STATION W LANDSKRONA SURFACE WATER (0-10 m)

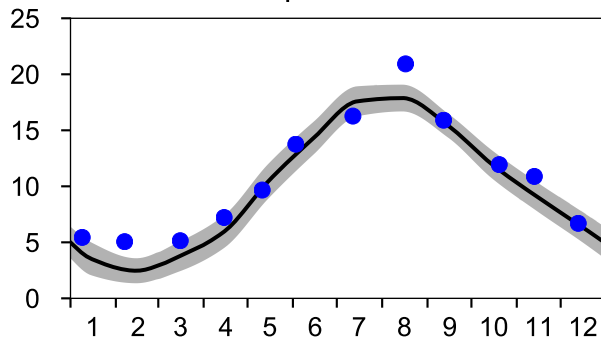
Annual Cycles

— Mean 2001-2015

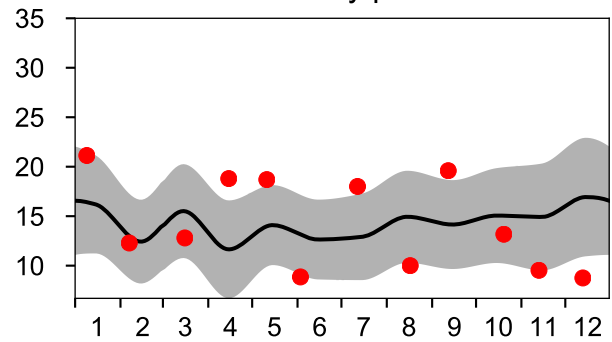
■ St.Dev.

● 2020

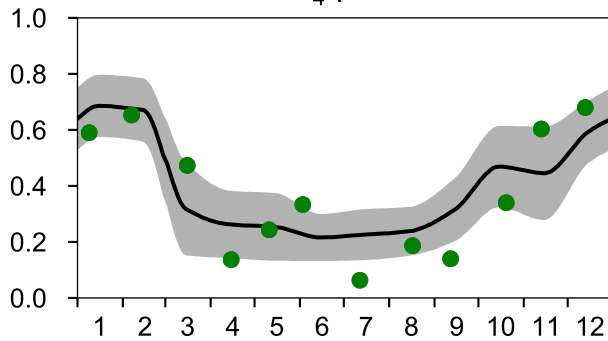
Temperature °C



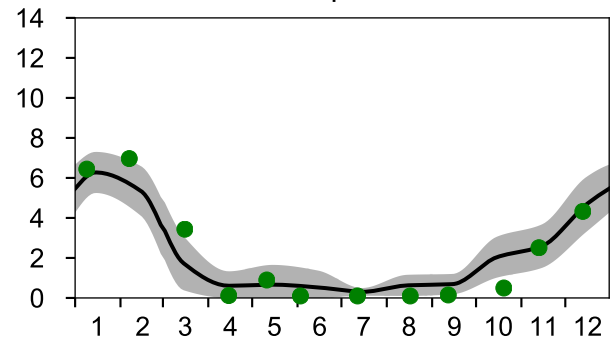
Salinity psu



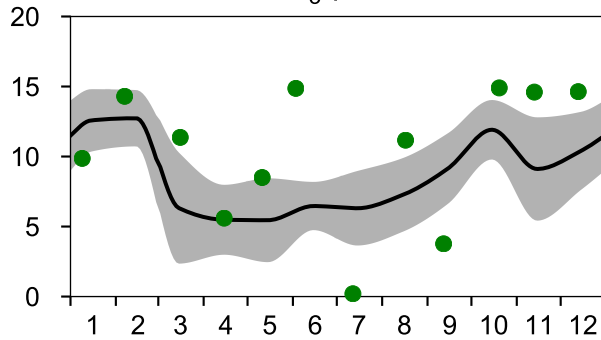
PO₄ µmol/l



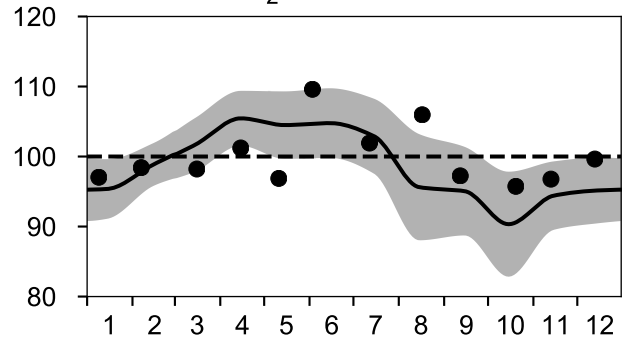
DIN µmol/l



SiO₃ µmol/l

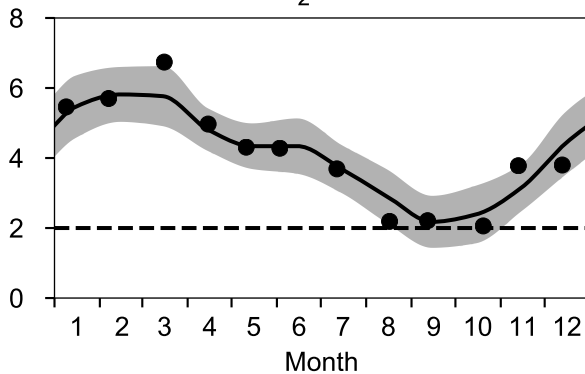


O₂ saturation %

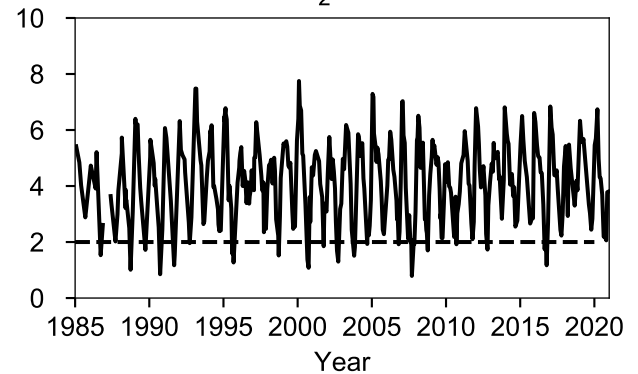


OXYGEN IN BOTTOM WATER (depth >= 40 m)

O₂ ml/l

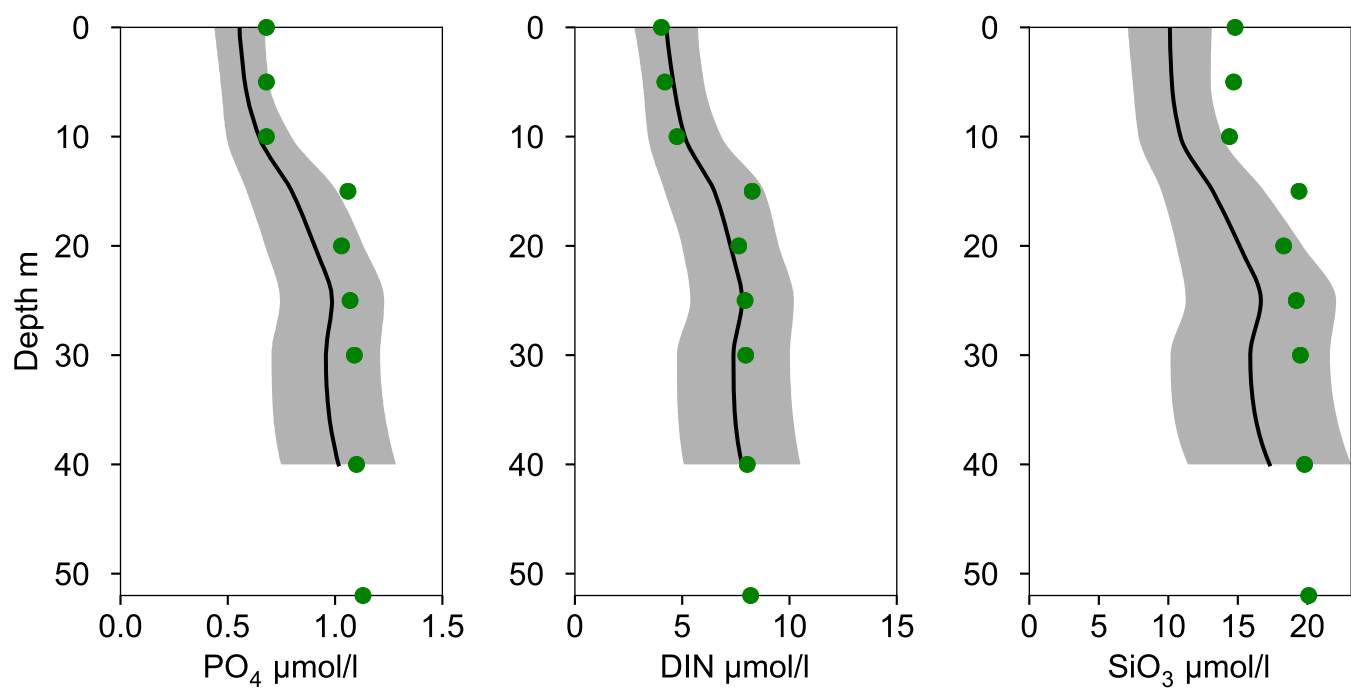
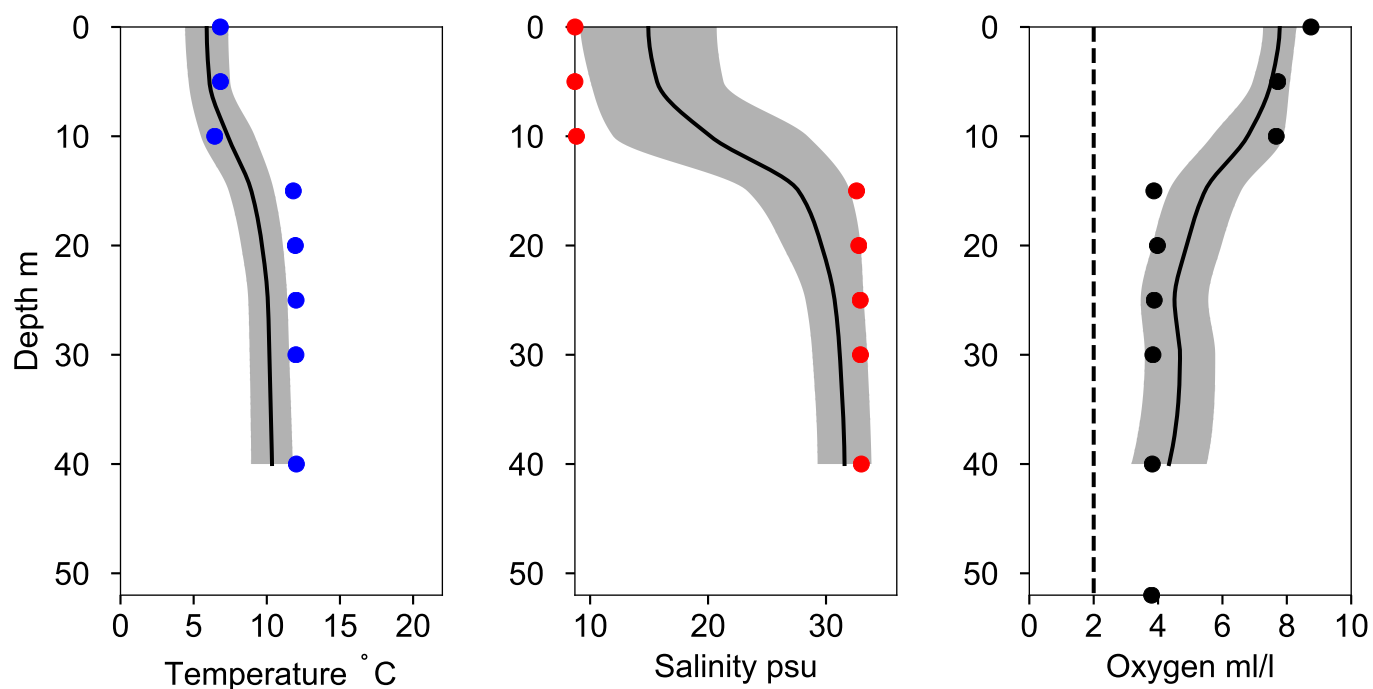


O₂ ml/l



Vertical profiles W LANDSKRONA December

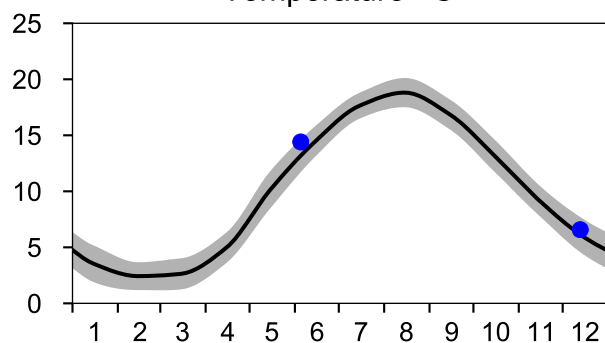
— Mean 2001-2015 St.Dev. • 2020-12-13



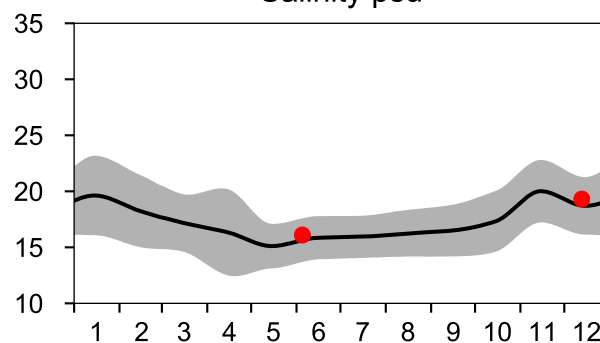
STATION L9 LAHOLMSBUKTEN SURFACE WATER (0-10 m)

Annual Cycles

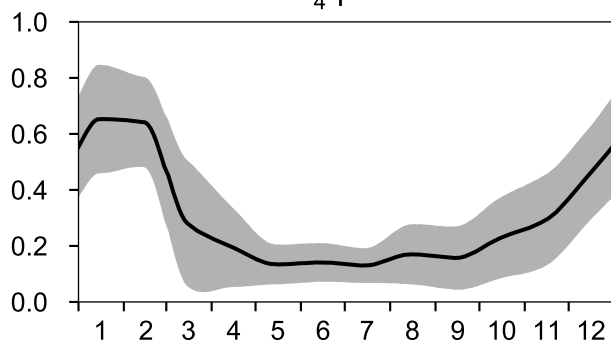
— Mean 2001-2015
Temperature °C



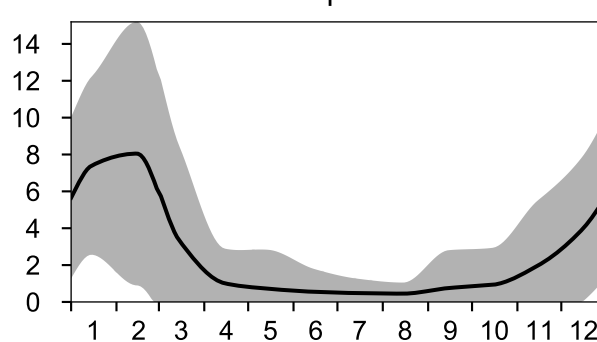
■ St.Dev. ● 2020
Salinity psu



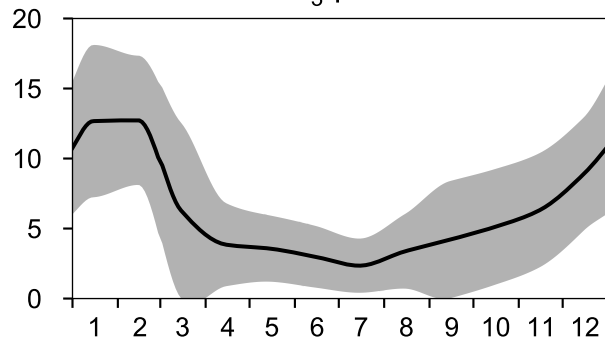
PO₄ μmol/l



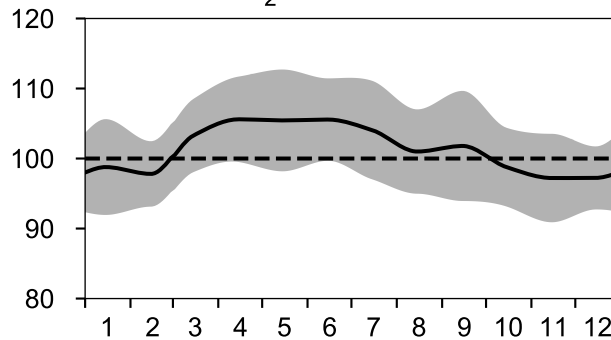
DIN μmol/l



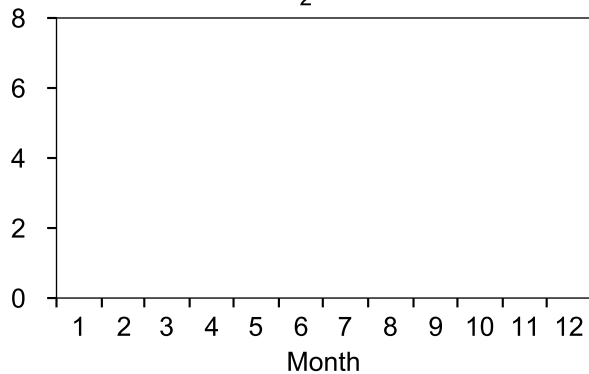
SiO₃ μmol/l



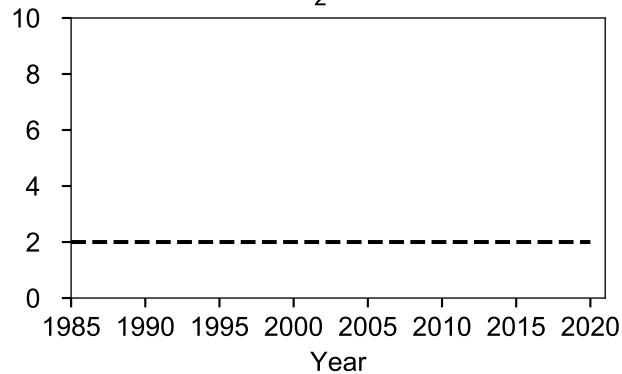
O₂ saturation %



O₂ ml/l

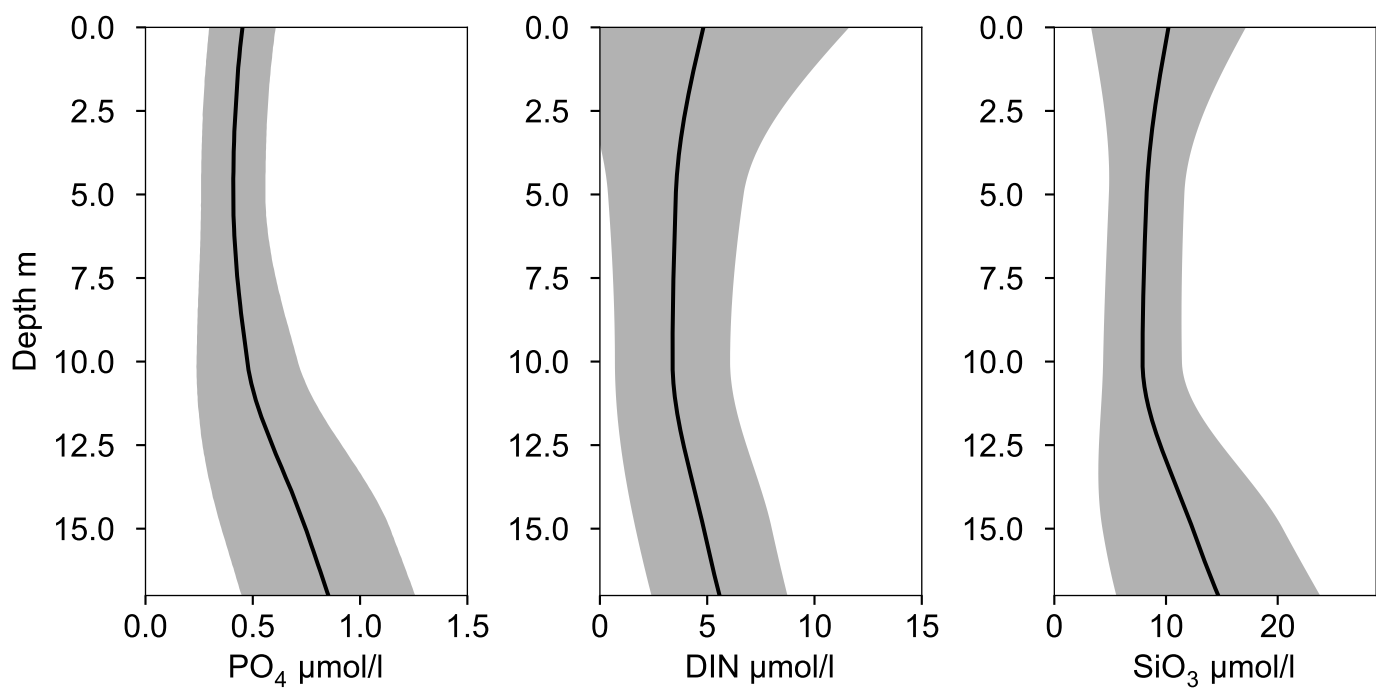
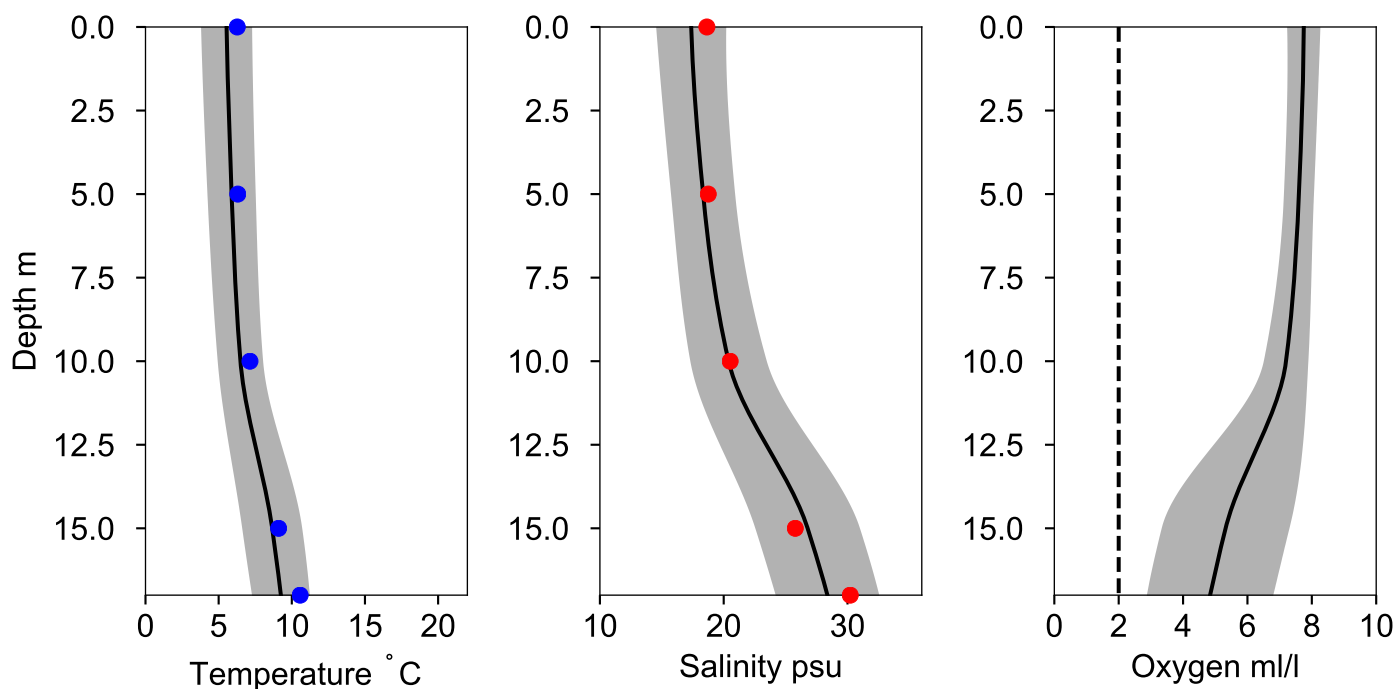


O₂ ml/l



Vertical profiles L9 LAHOLMSBUKTEN December

— Mean 2001-2015 St.Dev. ● 2020-12-13



STATION ANHOLT E SURFACE WATER (0-10 m)

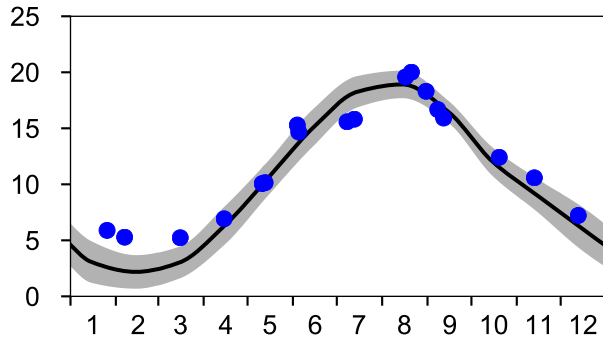
Annual Cycles

— Mean 2001-2015

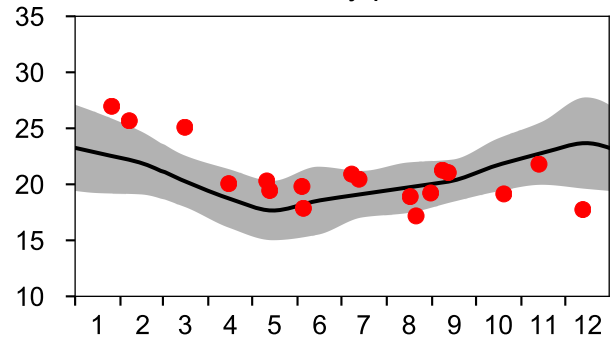
■ St.Dev.

● 2020

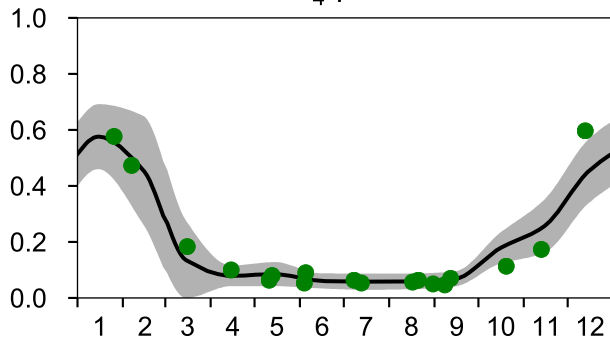
Temperature °C



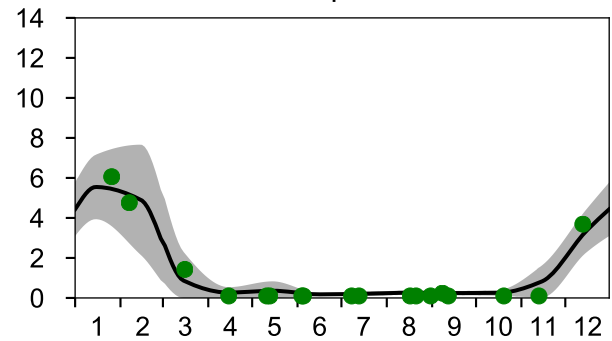
Salinity psu



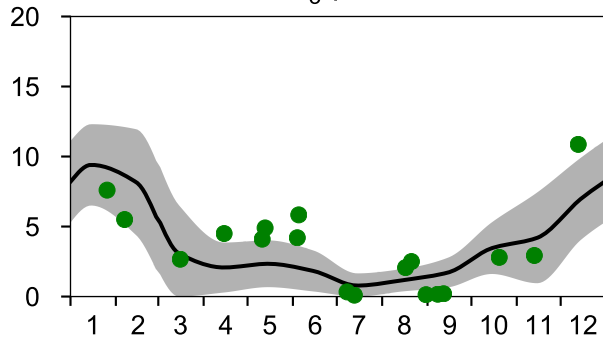
PO₄ µmol/l



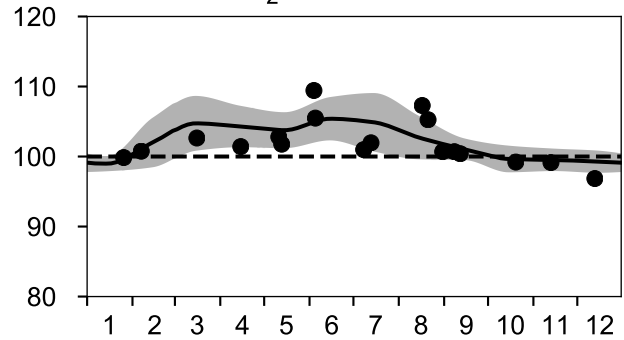
DIN µmol/l



SiO₃ µmol/l

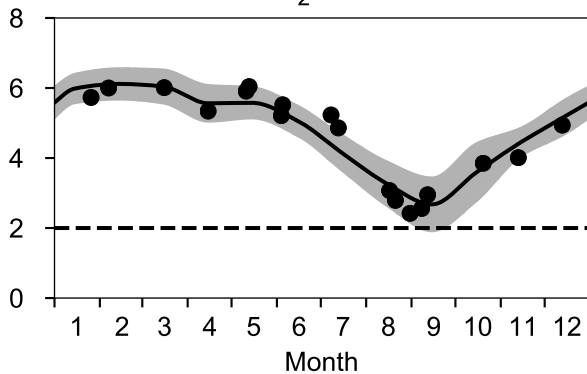


O₂ saturation %

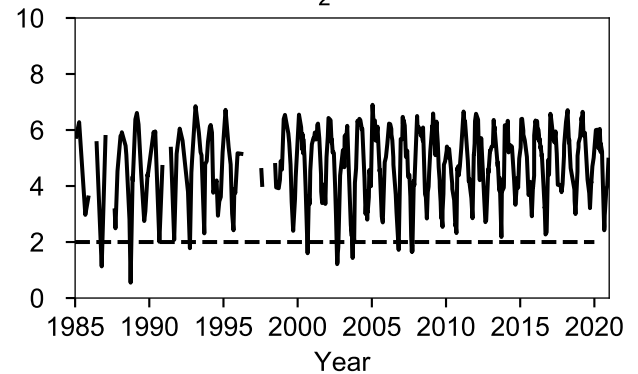


OXYGEN IN BOTTOM WATER (depth >= 52 m)

O₂ ml/l

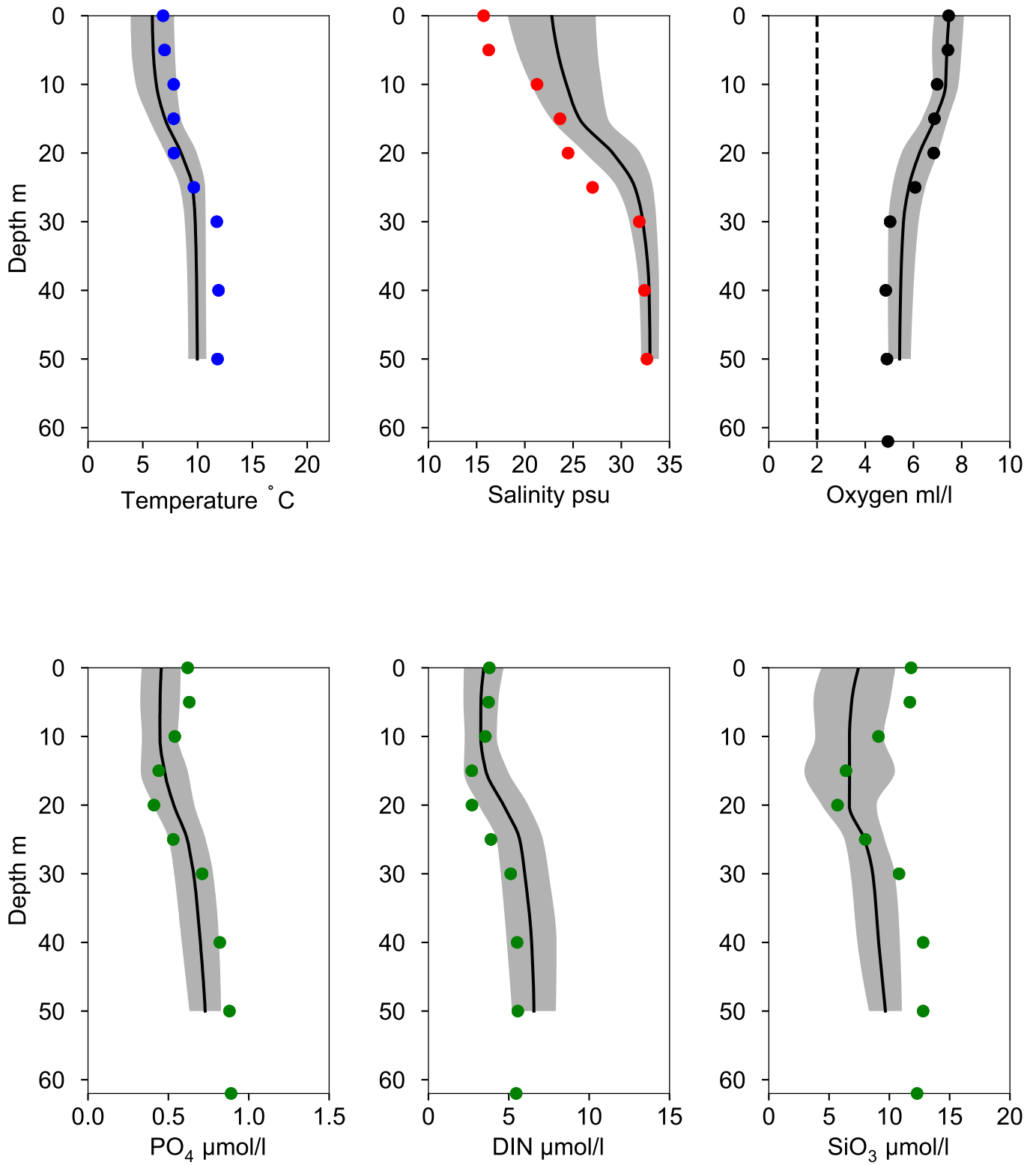


O₂ ml/l



Vertical profiles ANHOLT E December

— Mean 2001-2015 St.Dev. • 2020-12-13



STATION N14 FALKENBERG SURFACE WATER (0-10 m)

Annual Cycles

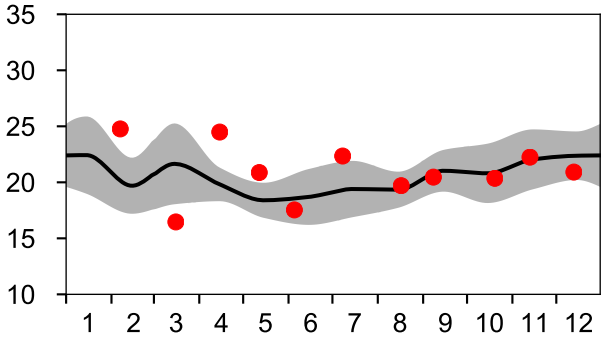
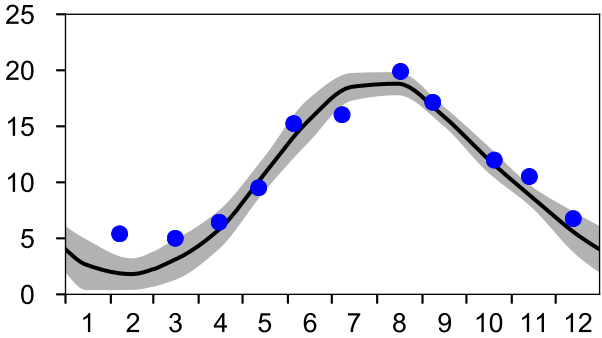
— Mean 2001-2015

■ St.Dev.

● 2020

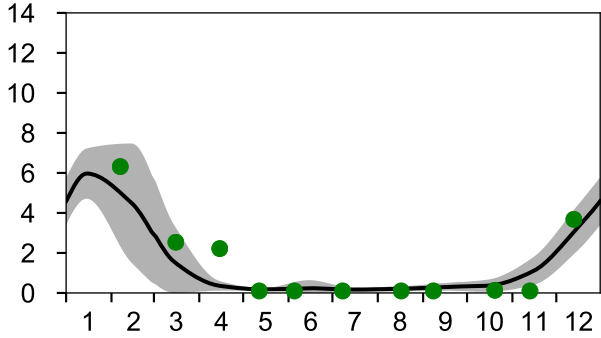
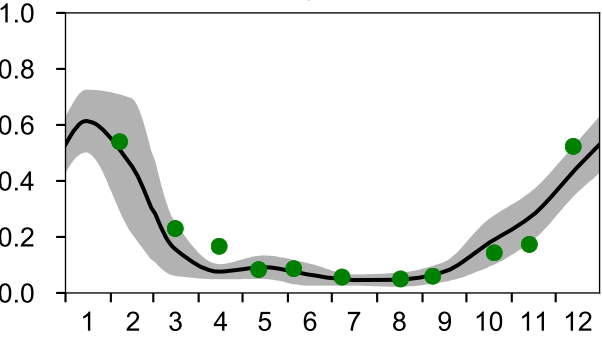
Temperature °C

Salinity psu



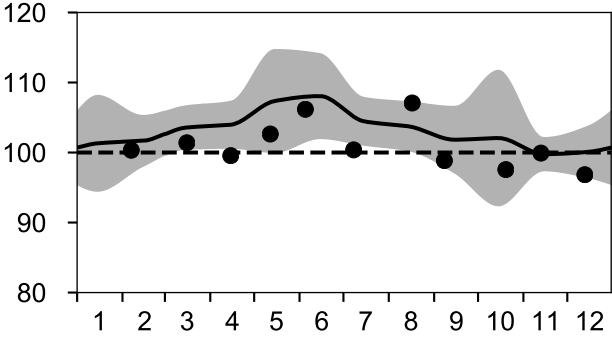
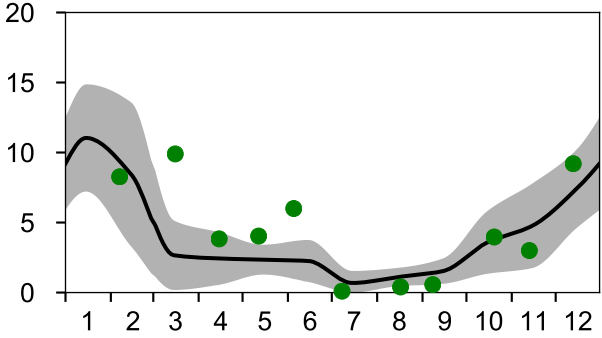
PO₄ µmol/l

DIN µmol/l



SiO₃ µmol/l

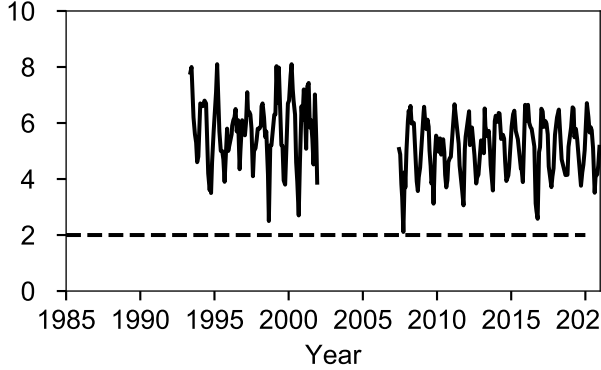
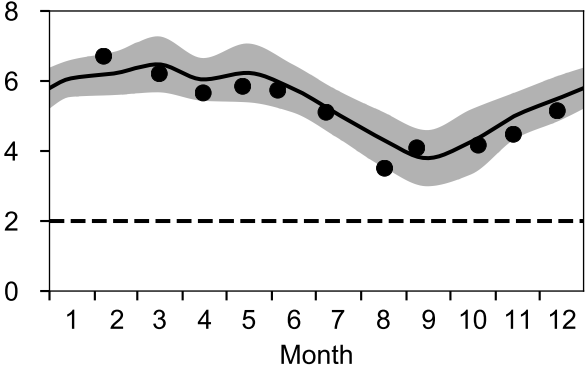
O₂ saturation %



OXYGEN IN BOTTOM WATER (depth >= 20 m)

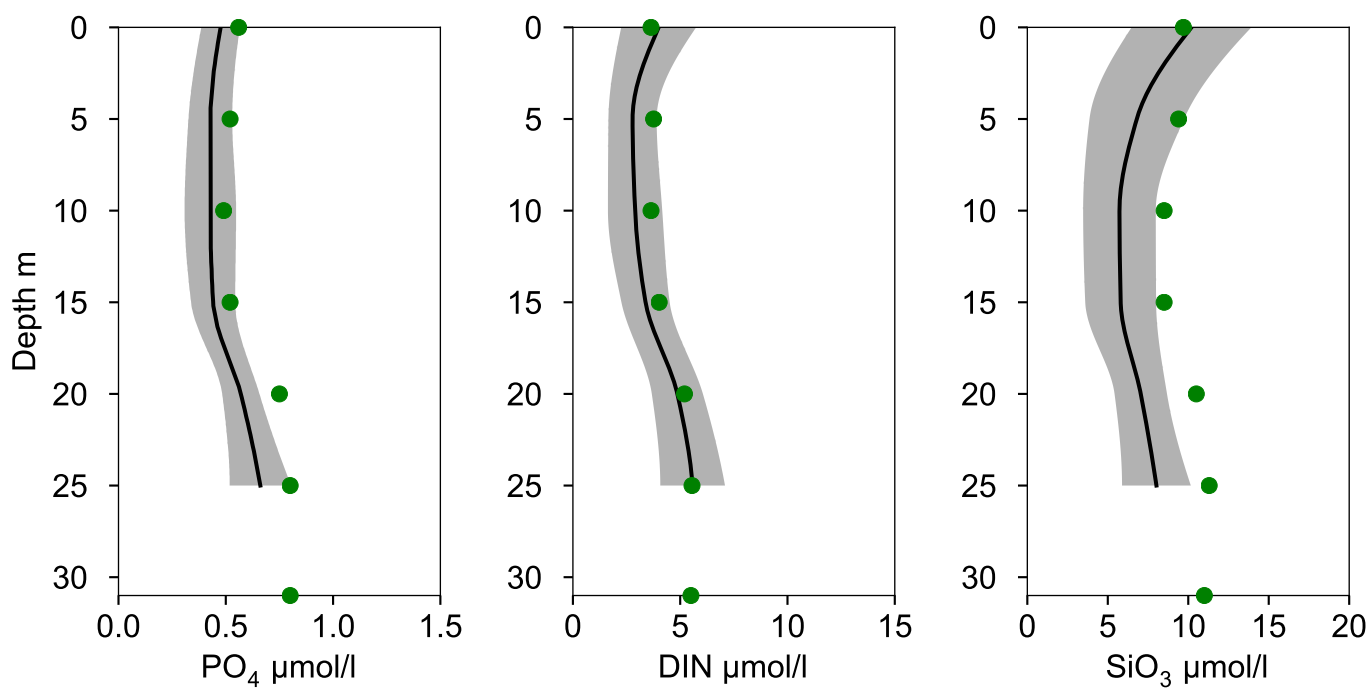
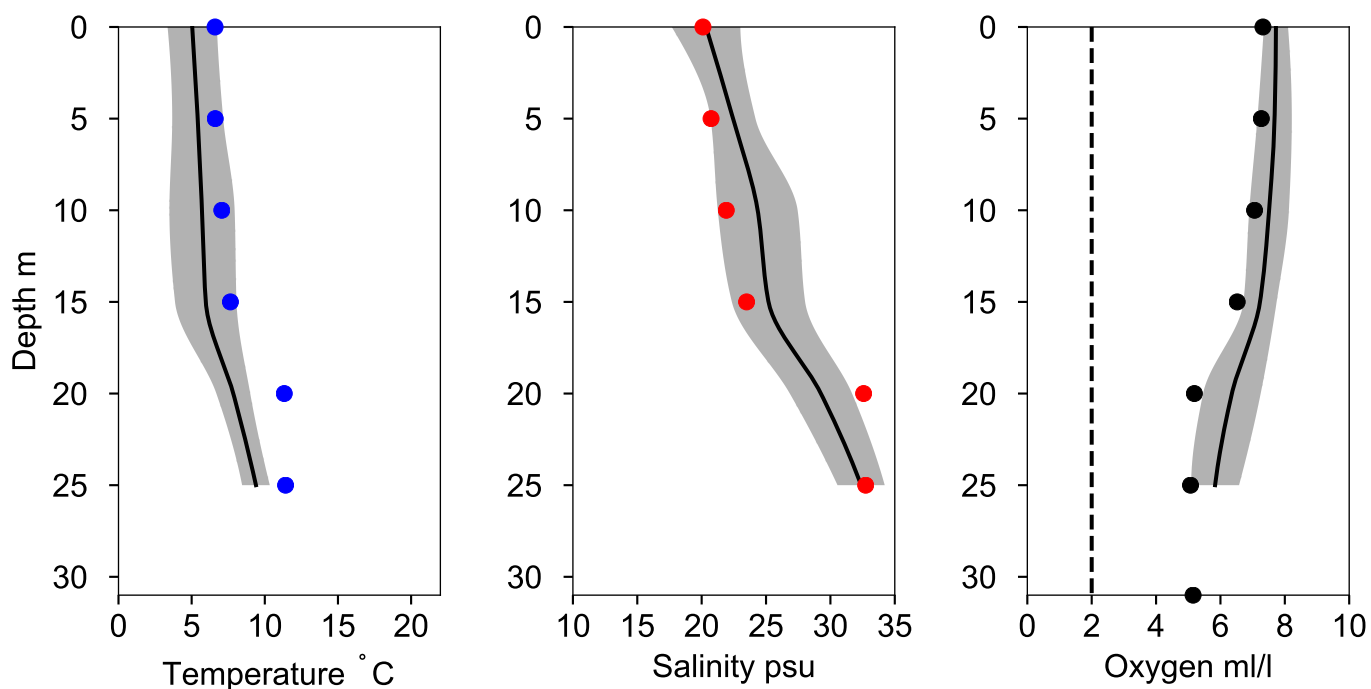
O₂ ml/l

O₂ ml/l



Vertical profiles N14 FALKENBERG December

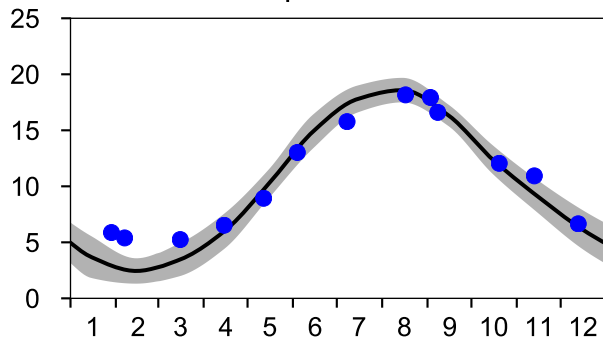
— Mean 2001-2015 St.Dev. • 2020-12-13



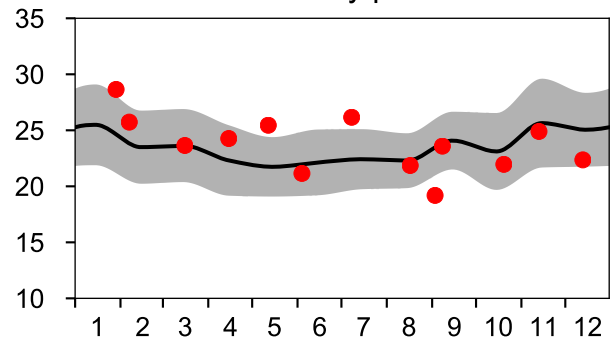
STATION FLADEN SURFACE WATER (0-10 m)

Annual Cycles

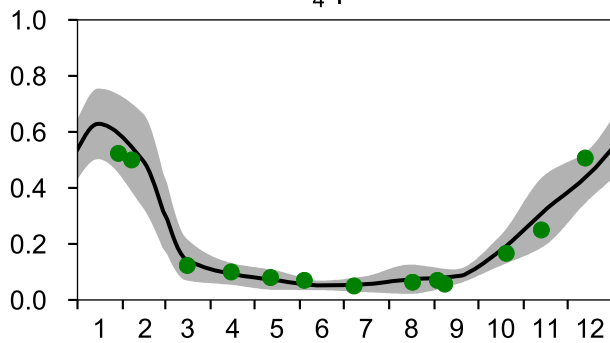
— Mean 2001-2015
Temperature °C



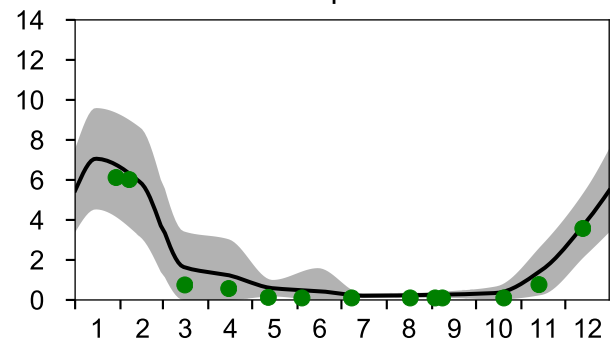
■ St.Dev. ● 2020
Salinity psu



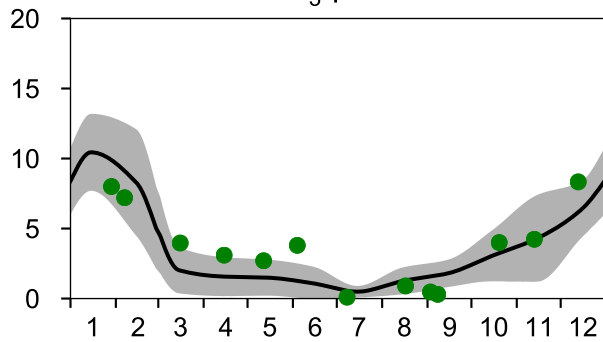
PO₄ µmol/l



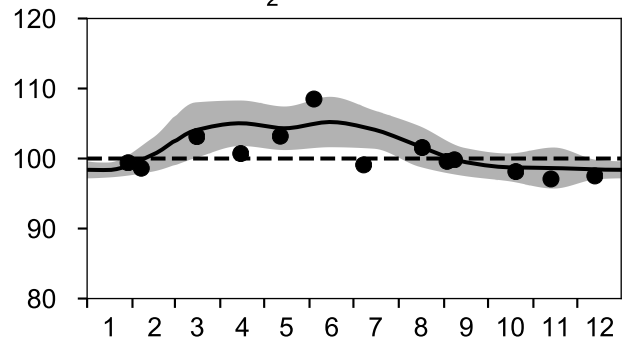
DIN µmol/l



SiO₃ µmol/l

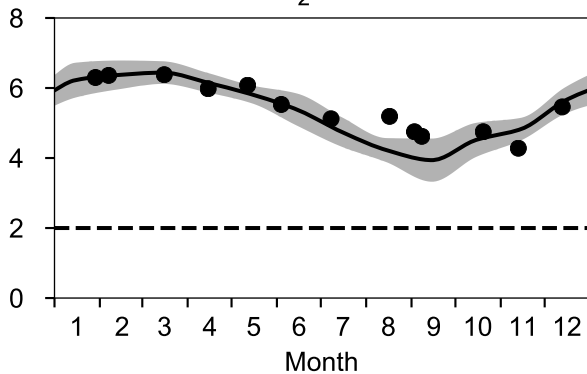


O₂ saturation %

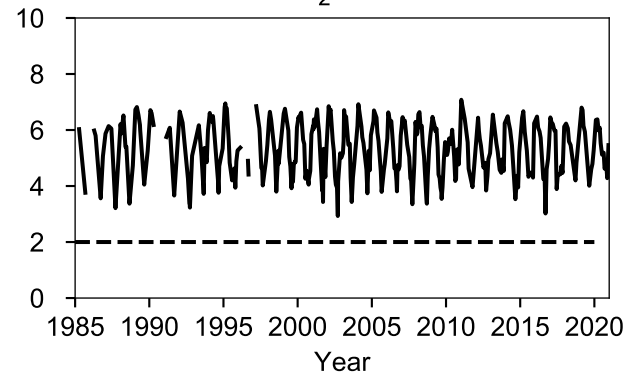


OXYGEN IN BOTTOM WATER (depth >= 74 m)

O₂ ml/l

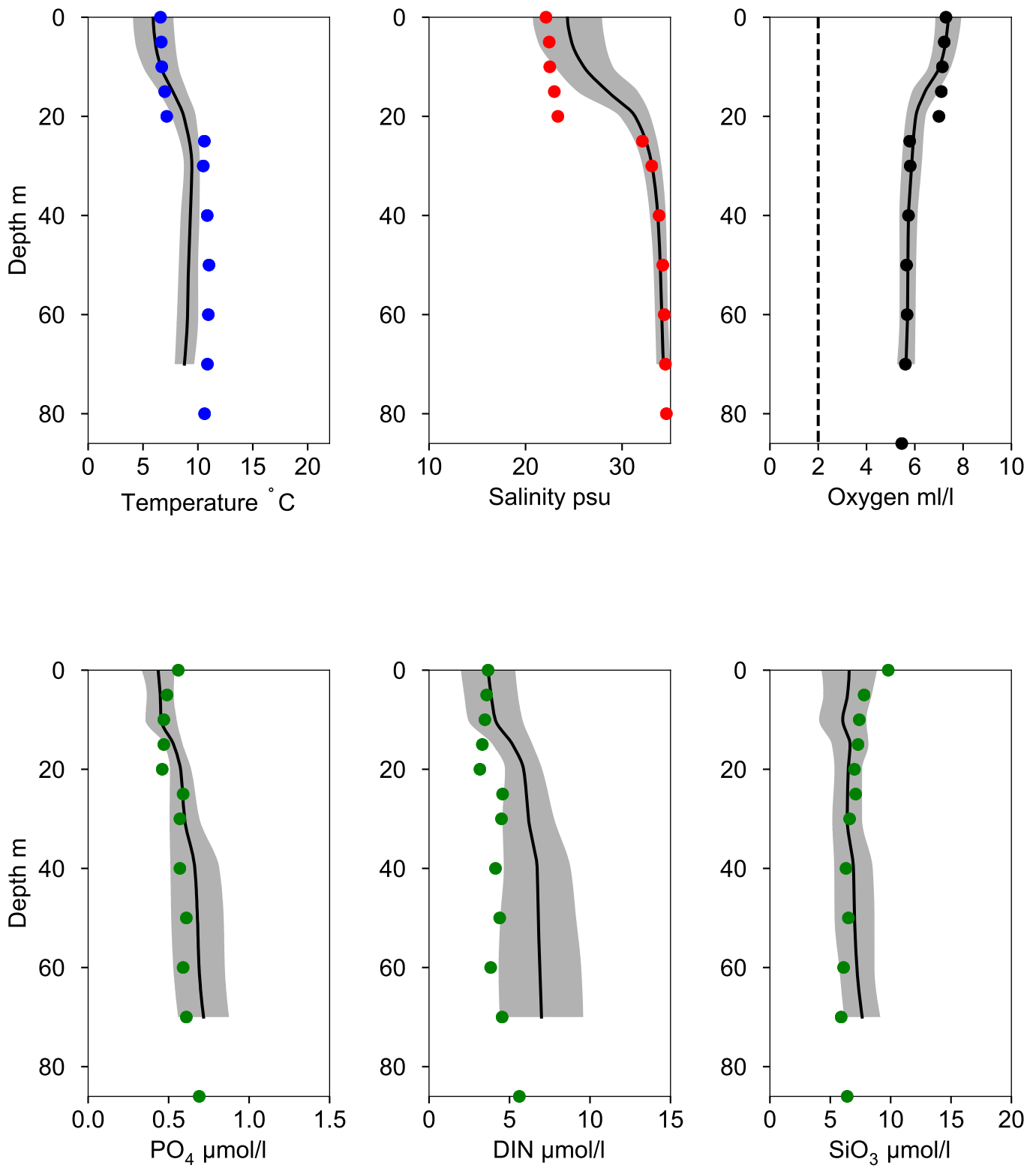


O₂ ml/l



Vertical profiles FLADEN December

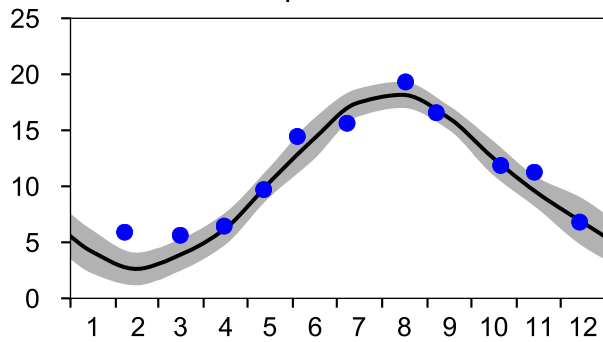
— Mean 2001-2015 St.Dev. • 2020-12-13



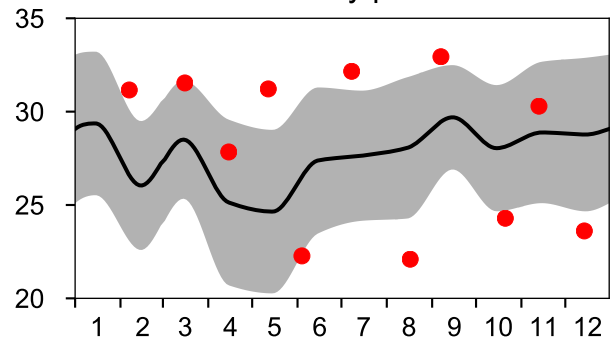
STATION P2 SURFACE WATER (0-10 m)

Annual Cycles

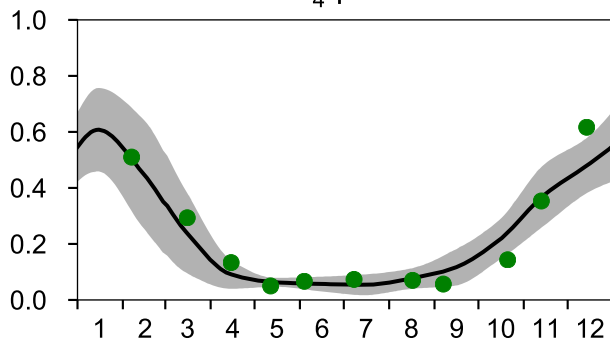
— Mean 2001-2015
Temperature °C



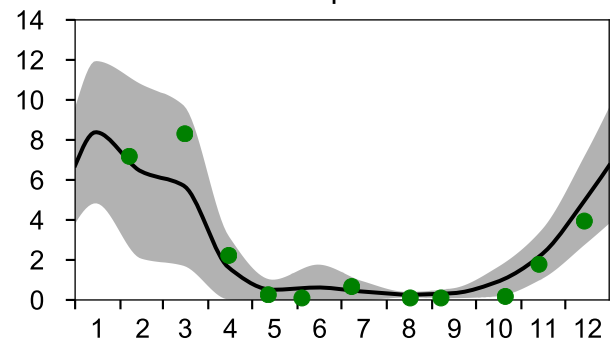
— St.Dev. ● 2020
Salinity psu



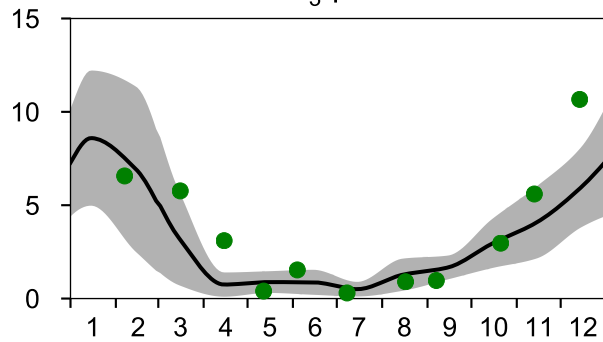
PO₄ µmol/l



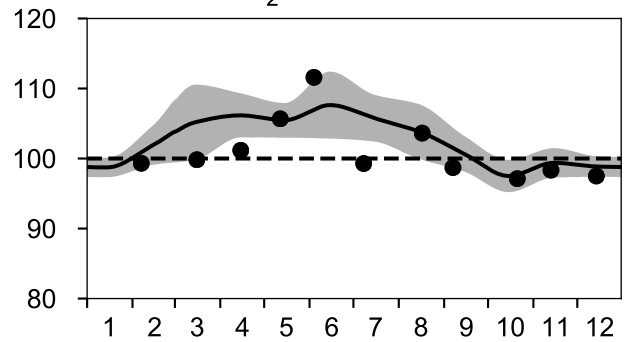
DIN µmol/l



SiO₃ µmol/l

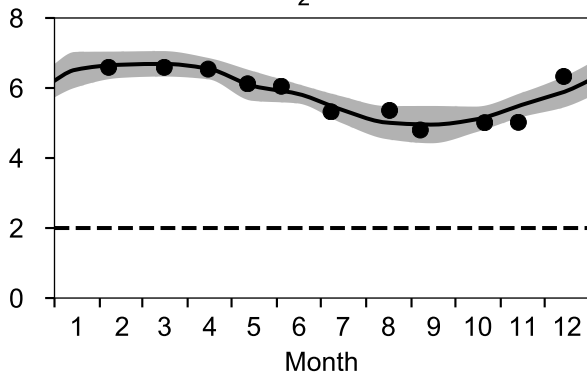


O₂ saturation %

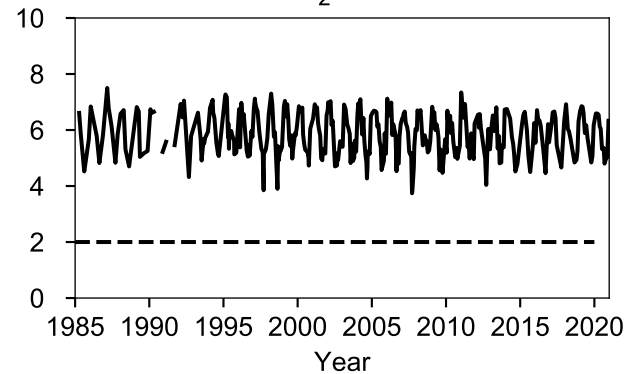


OXYGEN IN BOTTOM WATER (depth >= 75 m)

O₂ ml/l

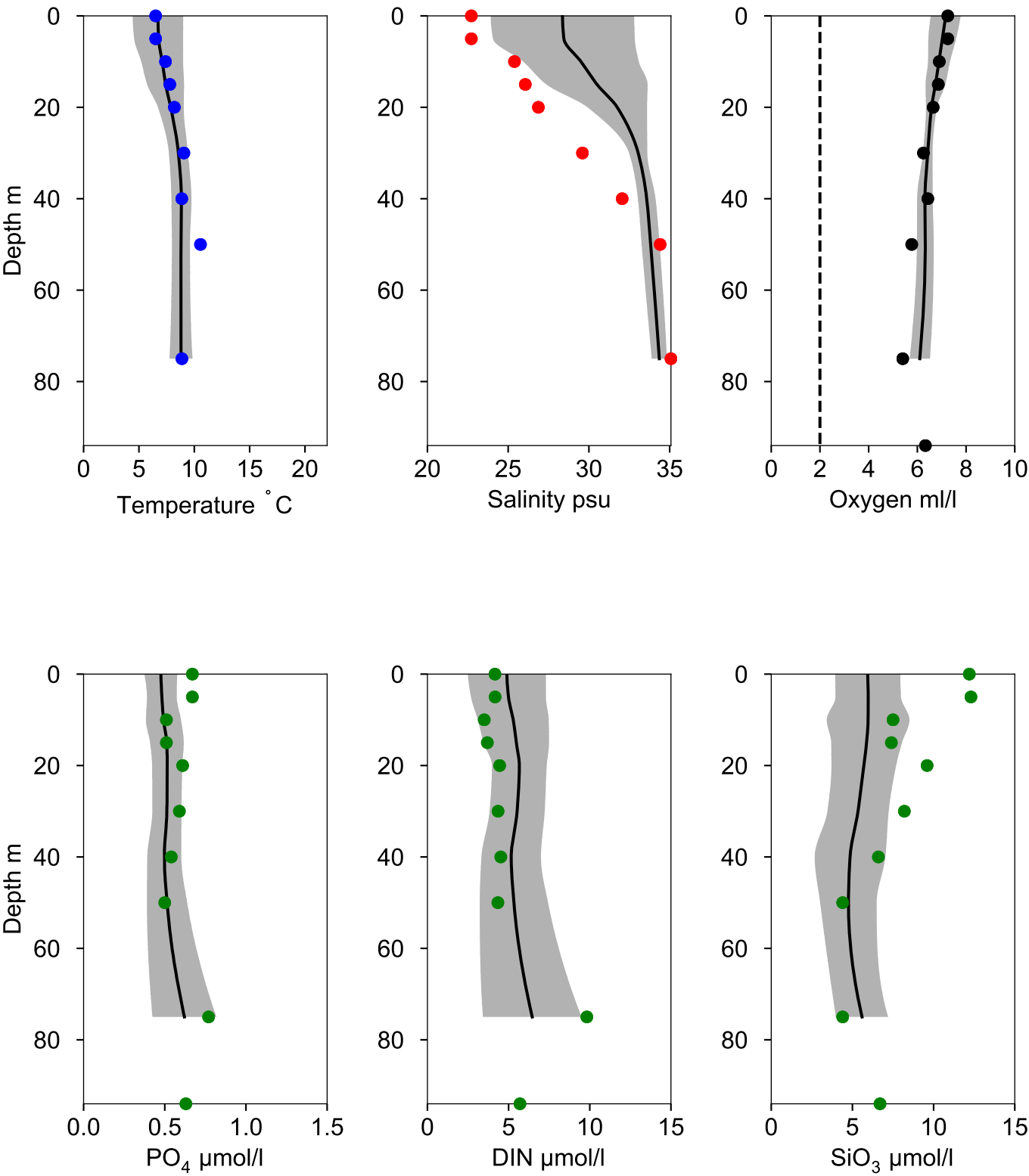


O₂ ml/l



Vertical profiles P2 December

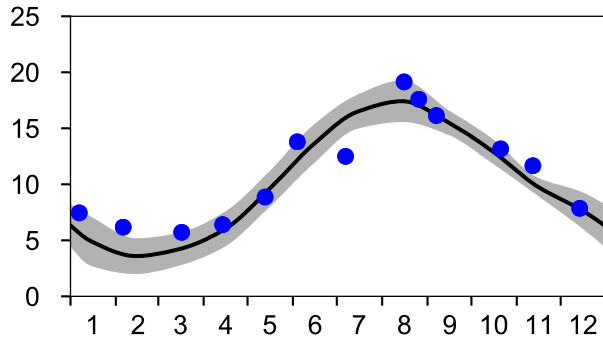
— Mean 2001-2015 St.Dev. • 2020-12-14



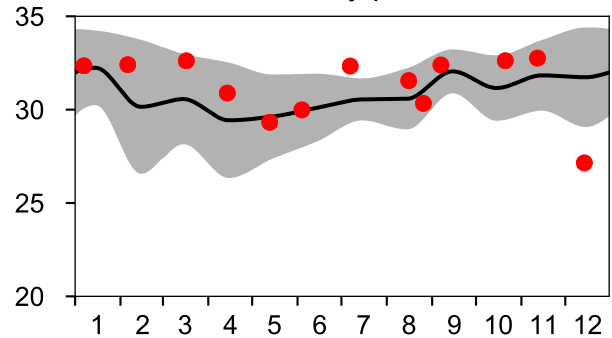
STATION Å17 SURFACE WATER (0-10 m)

Annual Cycles

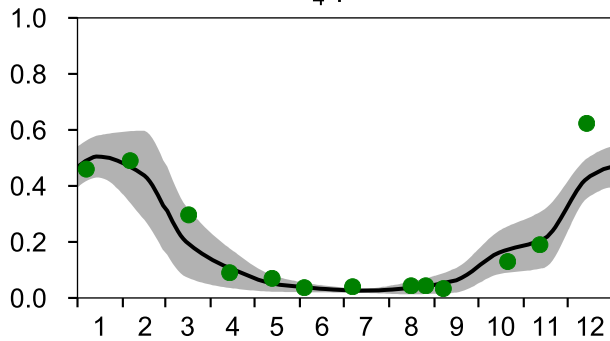
— Mean 2001-2015
Temperature °C



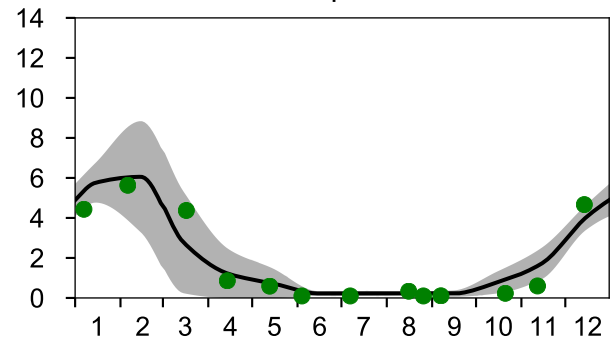
St.Dev. ● 2020
Salinity psu



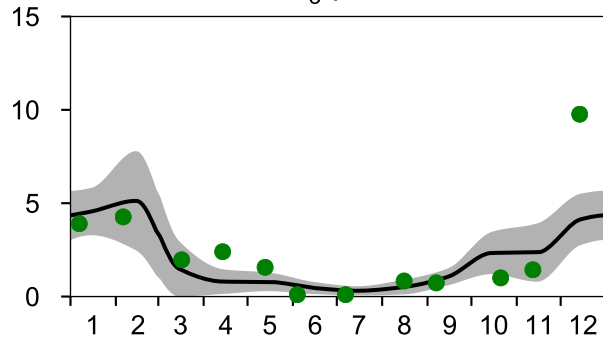
PO₄ µmol/l



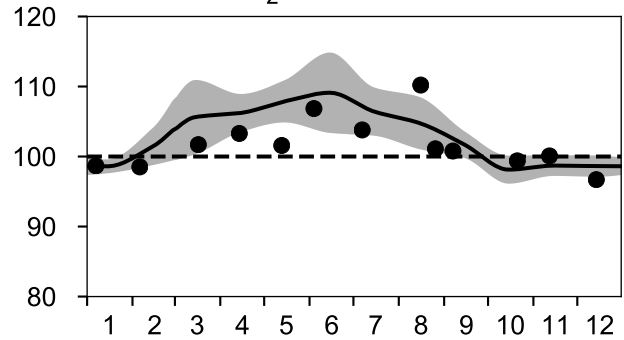
DIN µmol/l



SiO₃ µmol/l

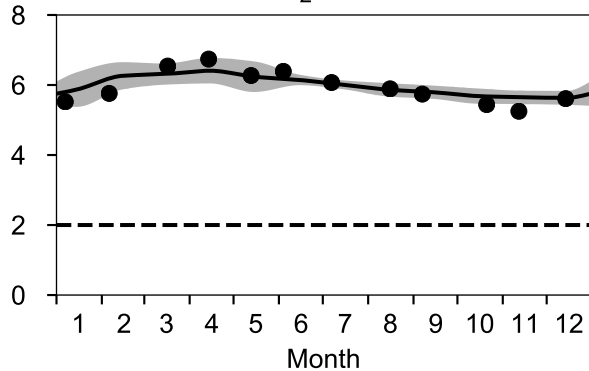


O₂ saturation %

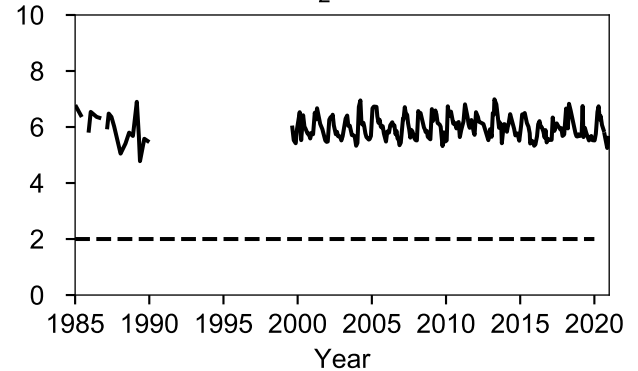


OXYGEN IN BOTTOM WATER (depth >= 300 m)

O₂ ml/l

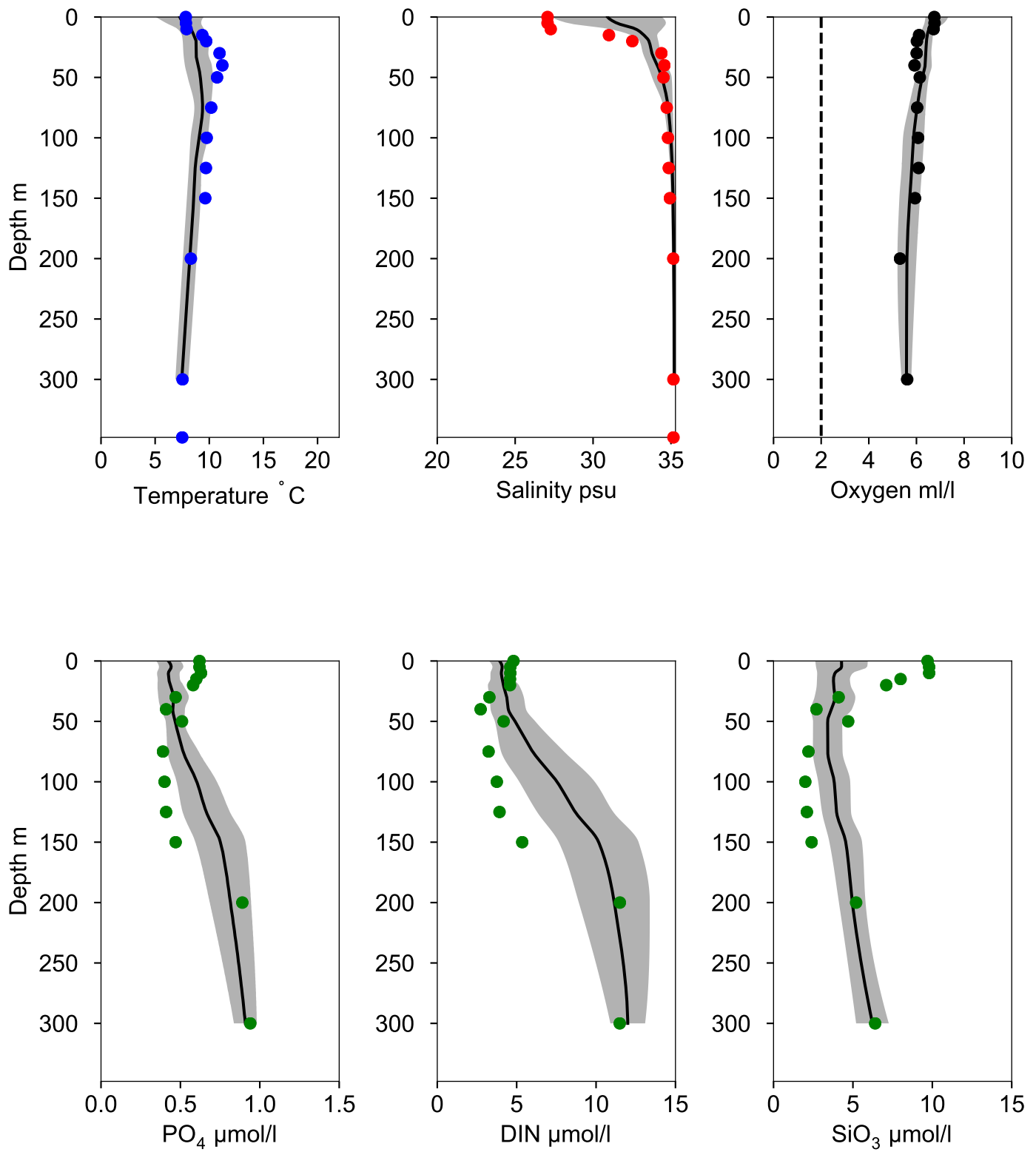


O₂ ml/l



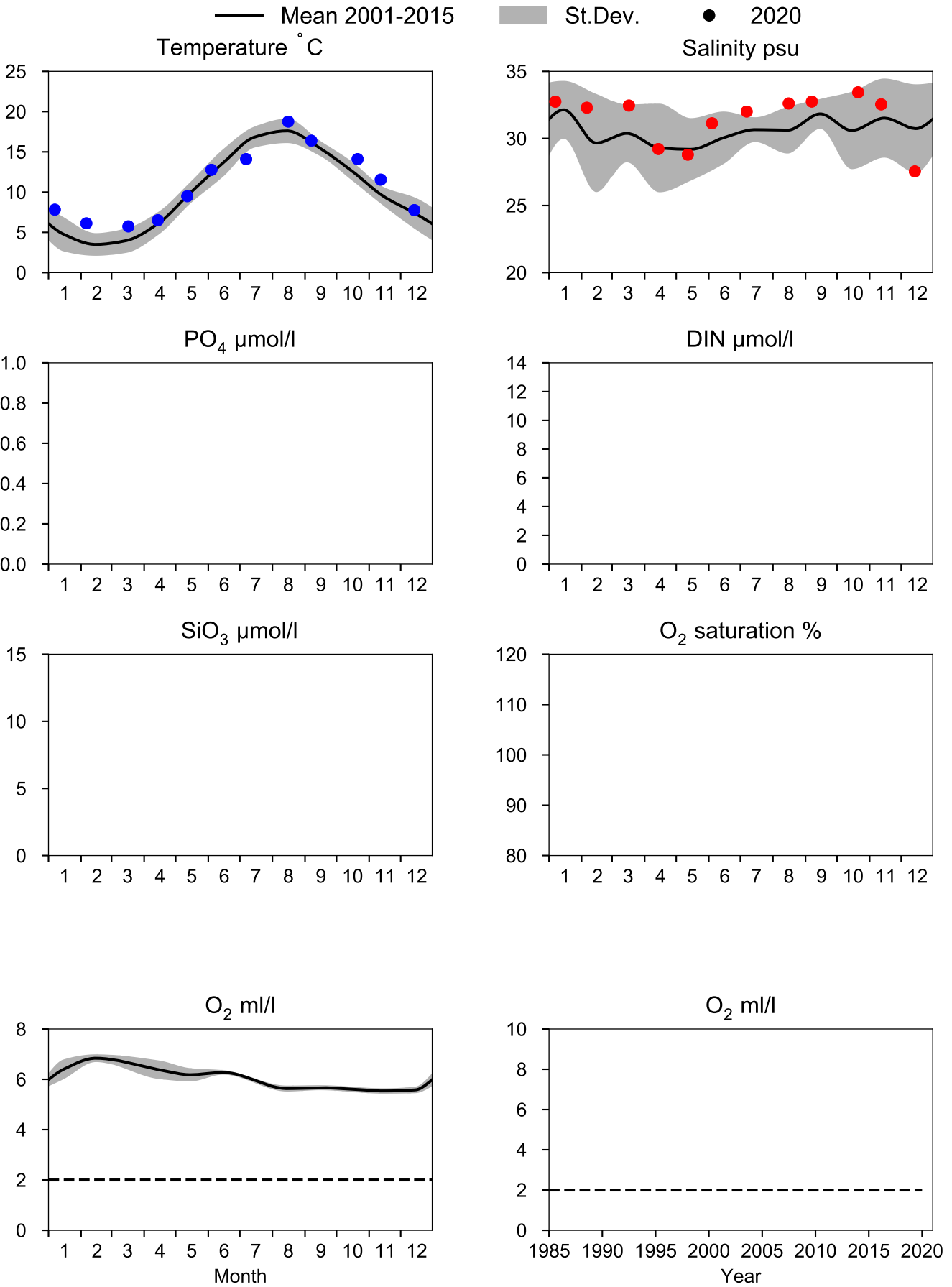
Vertical profiles A17 December

— Mean 2001-2015 St.Dev. • 2020-12-14



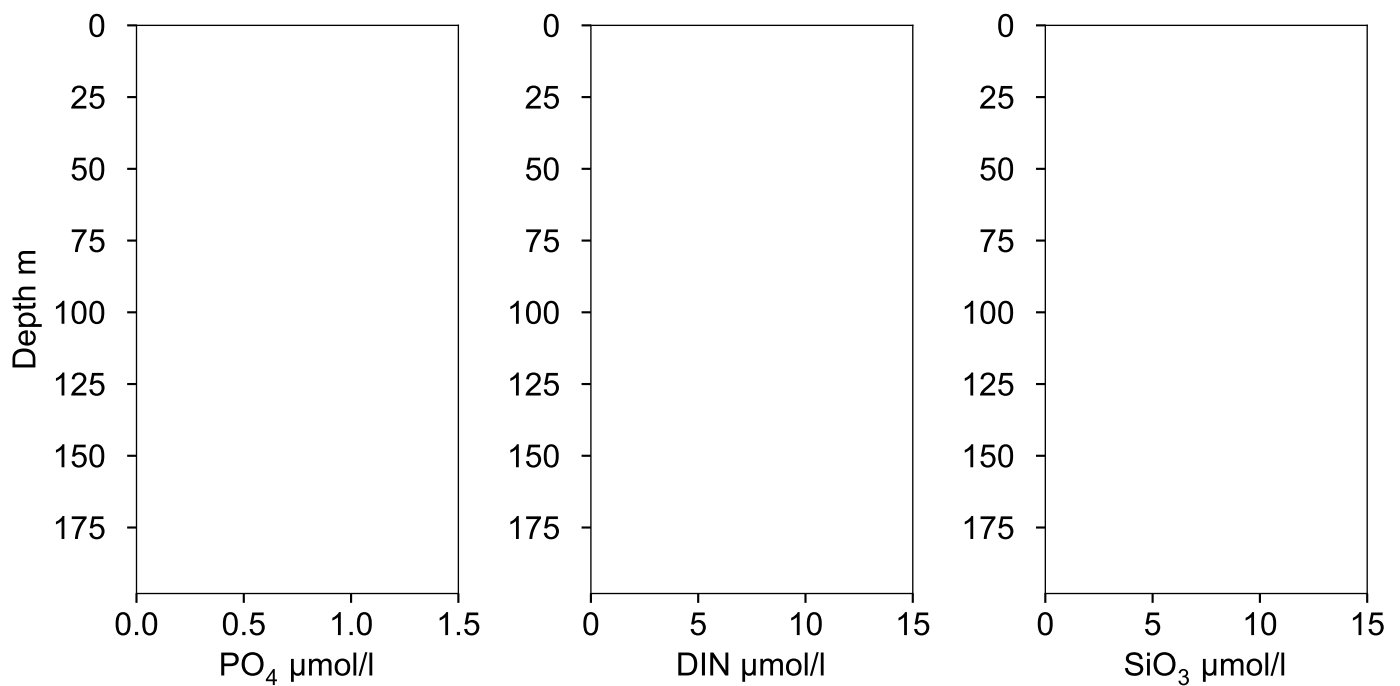
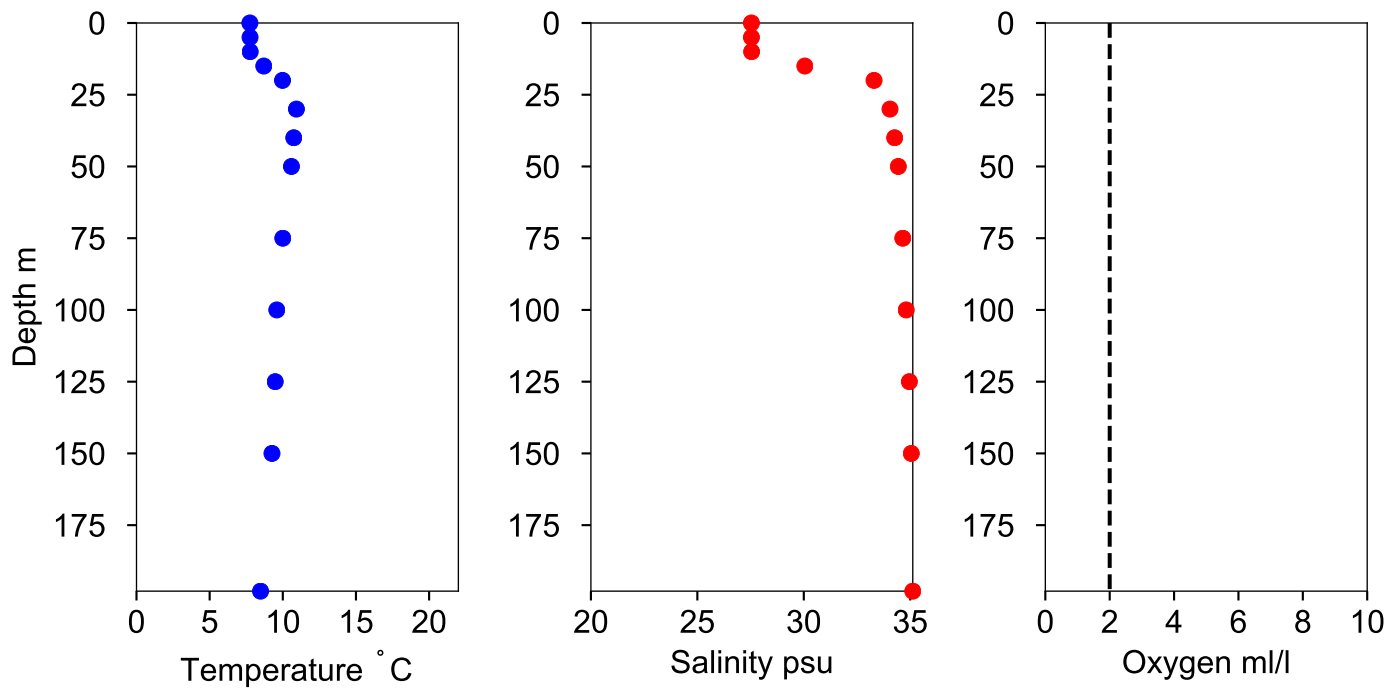
STATION Å16 SURFACE WATER (0-10 m)

Annual Cycles



Vertical profiles Å16 December

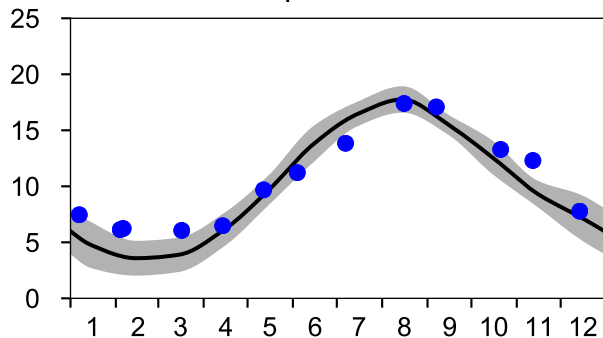
— Mean 2001-2015 ■ St.Dev. ● 2020-12-14



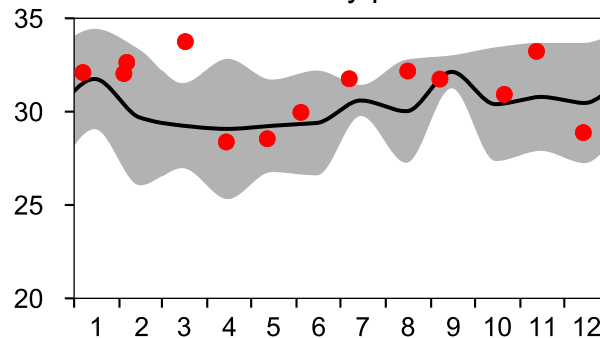
STATION Å15 SURFACE WATER (0-10 m)

Annual Cycles

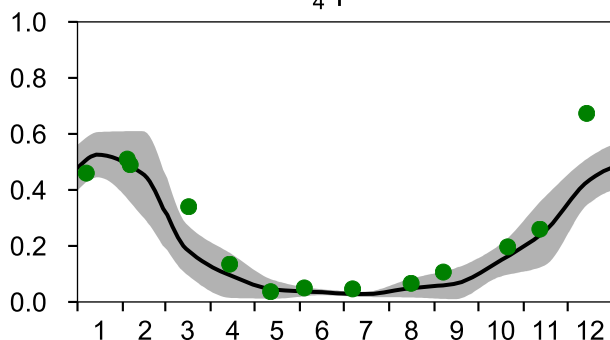
— Mean 2001-2015
Temperature °C



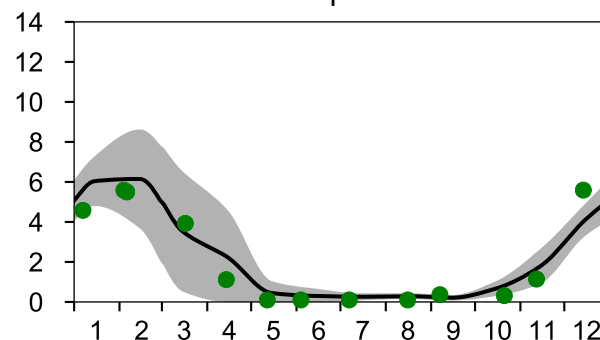
— St.Dev. ● 2020
Salinity psu



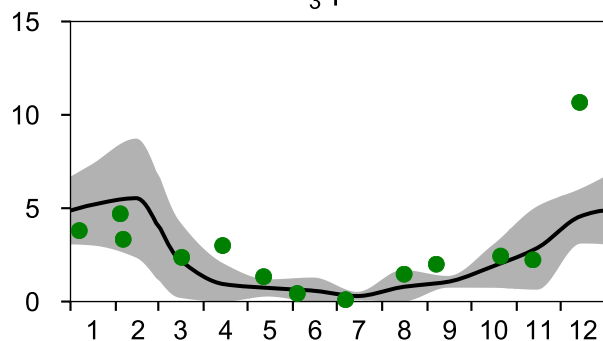
PO₄ µmol/l



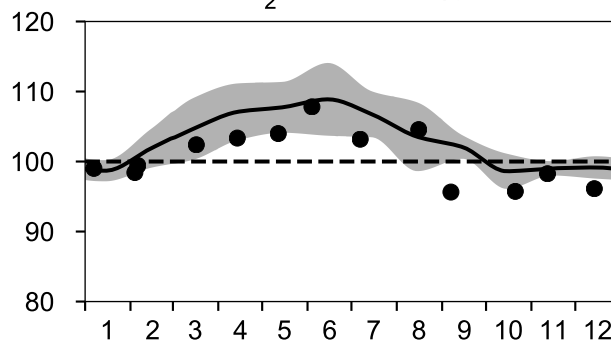
DIN µmol/l



SiO₃ µmol/l

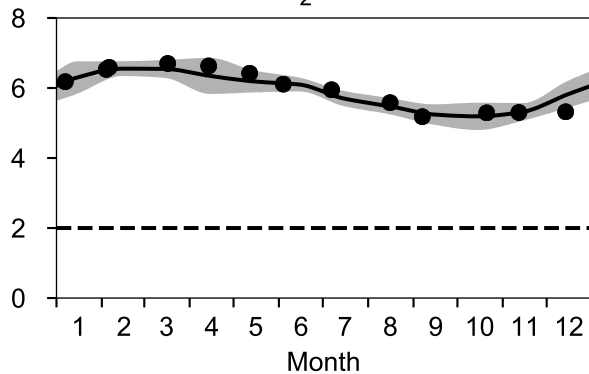


O₂ saturation %

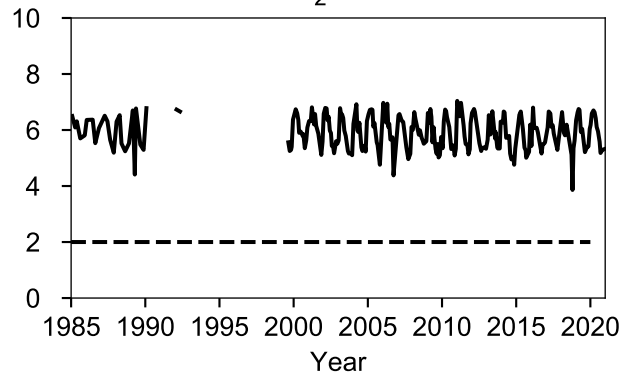


OXYGEN IN BOTTOM WATER (depth >= 125 m)

O₂ ml/l

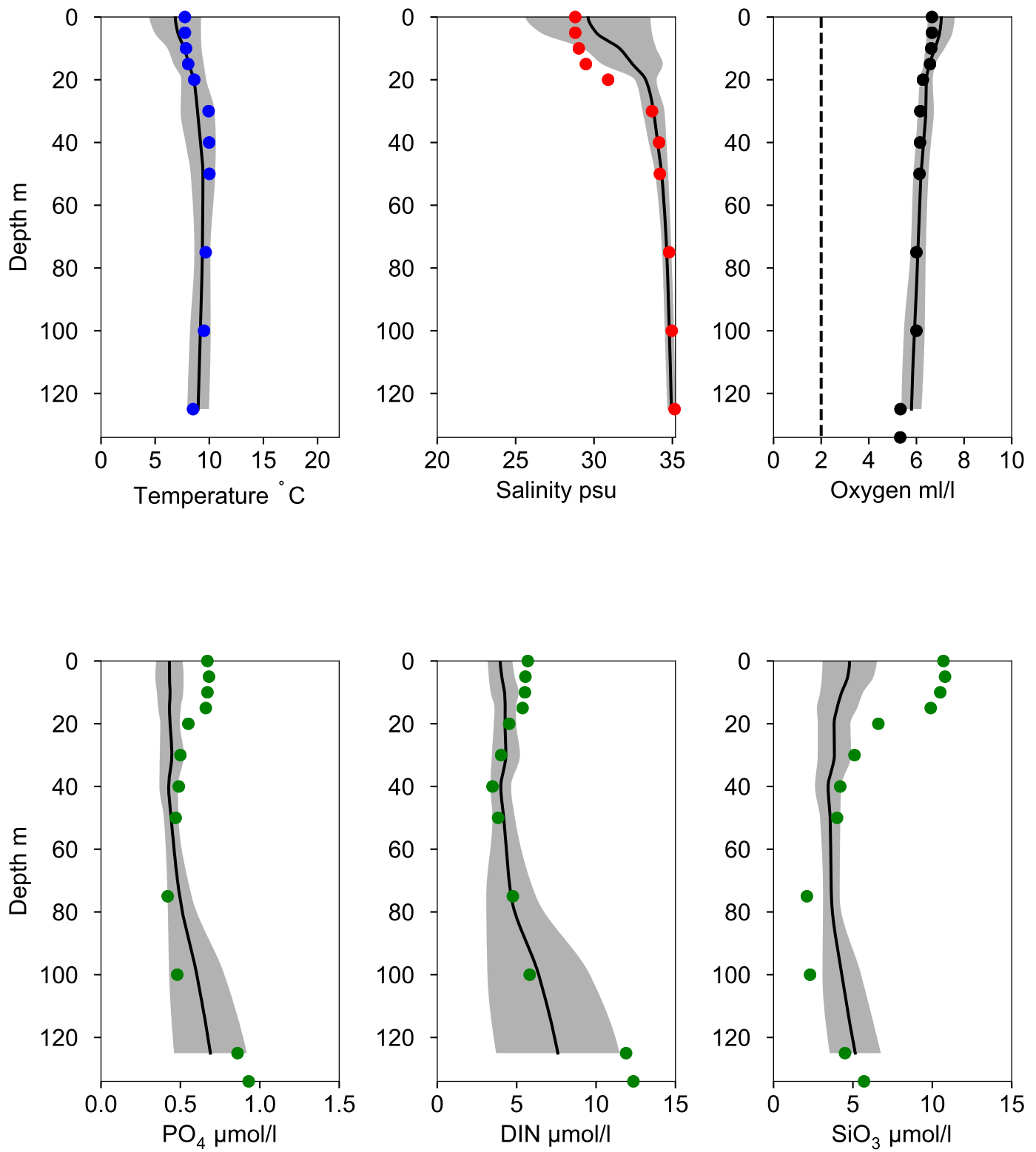


O₂ ml/l



Vertical profiles Å15 December

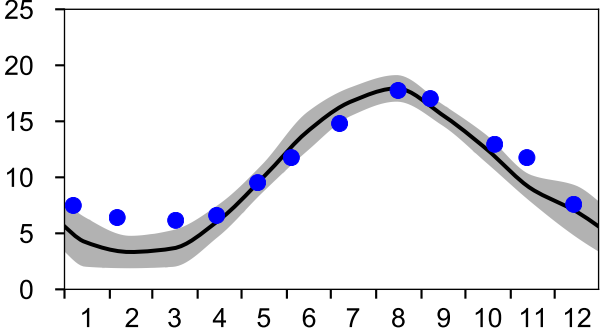
— Mean 2001-2015 St.Dev. • 2020-12-14



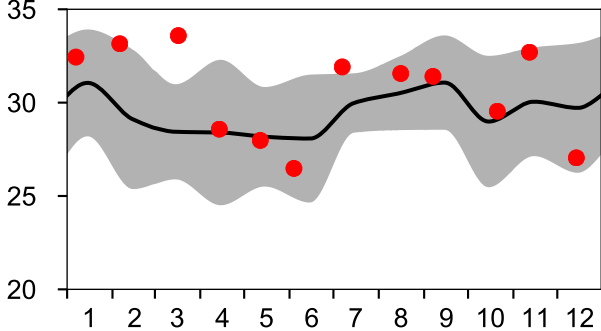
STATION Å14 SURFACE WATER (0-10 m)

Annual Cycles

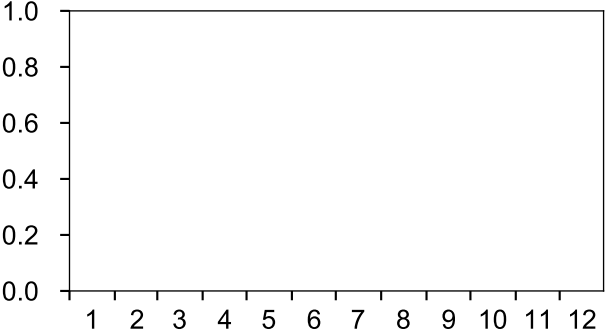
— Mean 2001-2015
Temperature °C



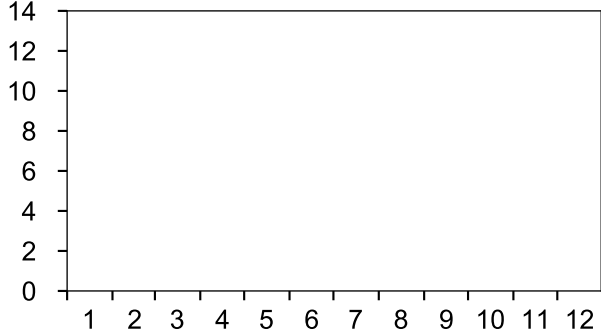
St.Dev. ● 2020
Salinity psu



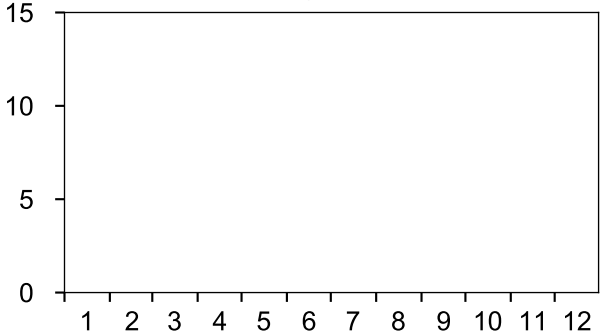
PO₄ µmol/l



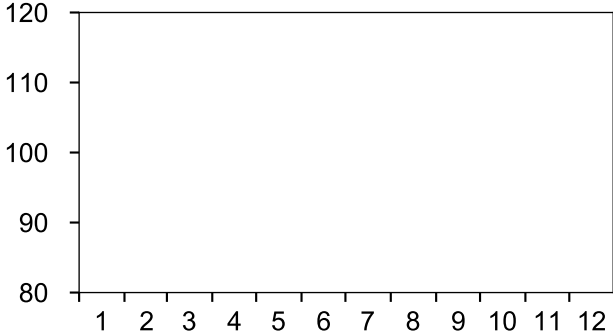
DIN µmol/l



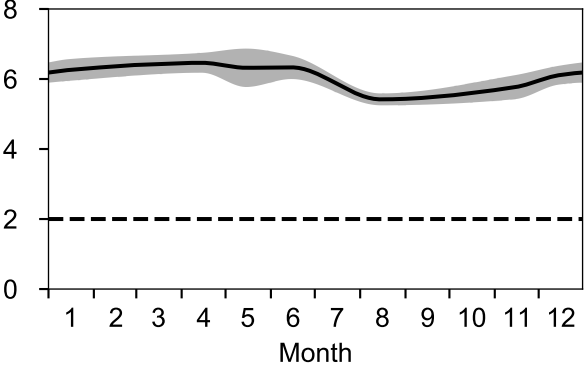
SiO₃ µmol/l



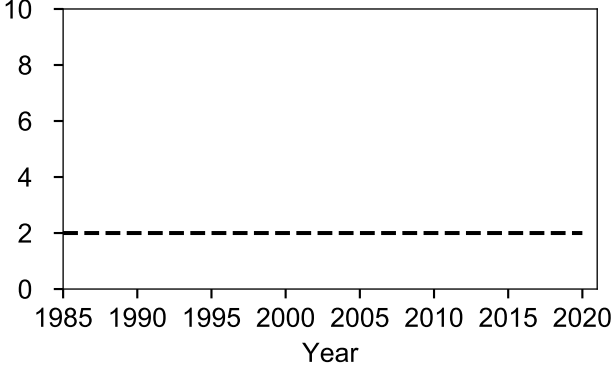
O₂ saturation %



O₂ ml/l

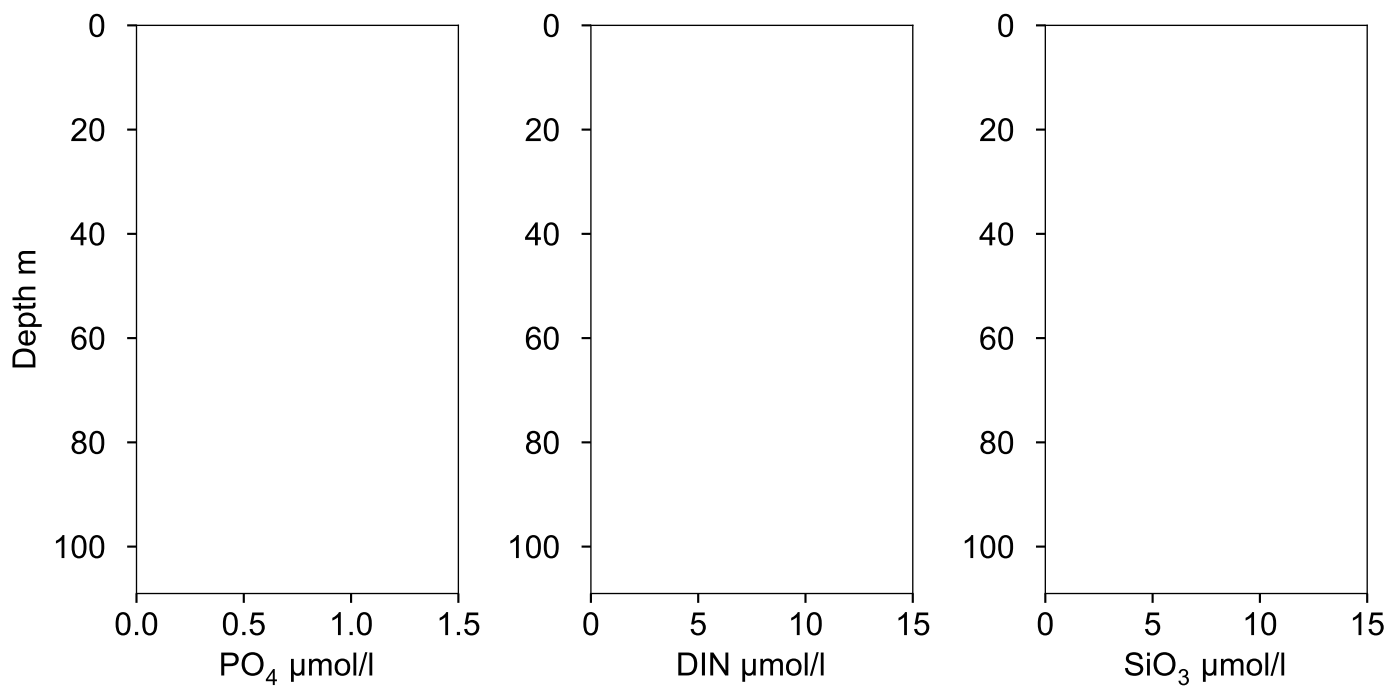
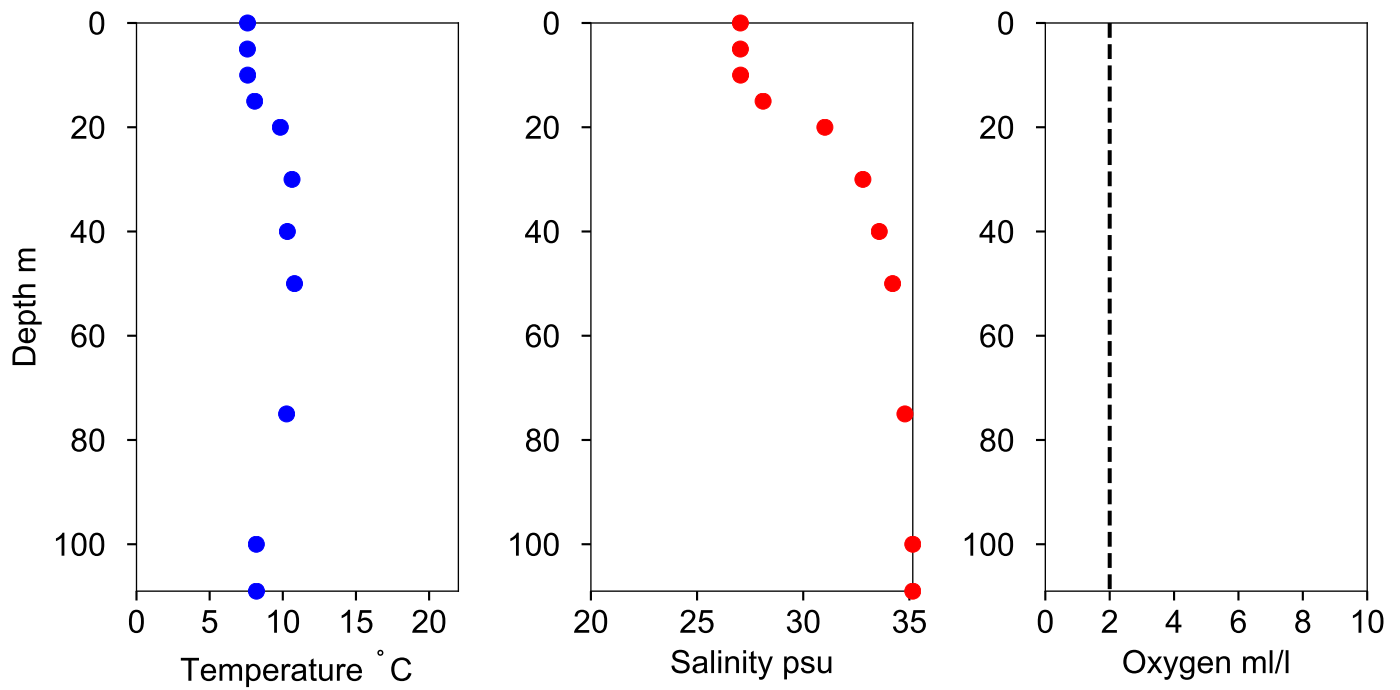


O₂ ml/l



Vertical profiles Å14 December

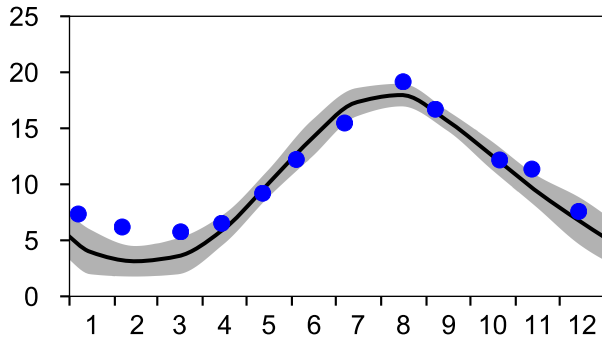
— Mean 2001-2015 ■ St.Dev. ● 2020-12-14



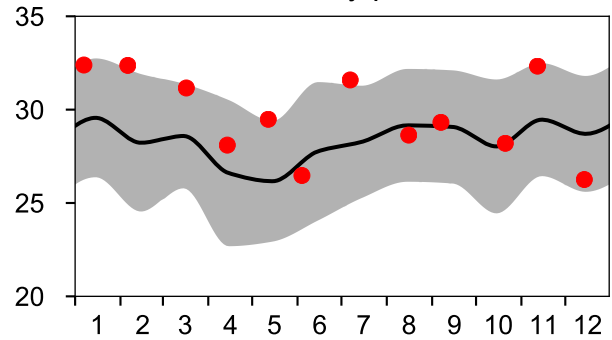
STATION Å13 SURFACE WATER (0-10 m)

Annual Cycles

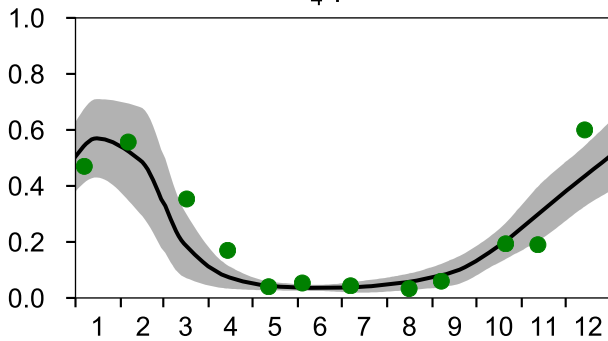
— Mean 2001-2015
Temperature °C



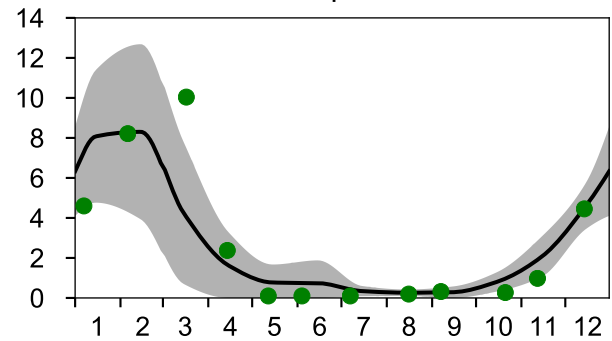
— St.Dev. • 2020
Salinity psu



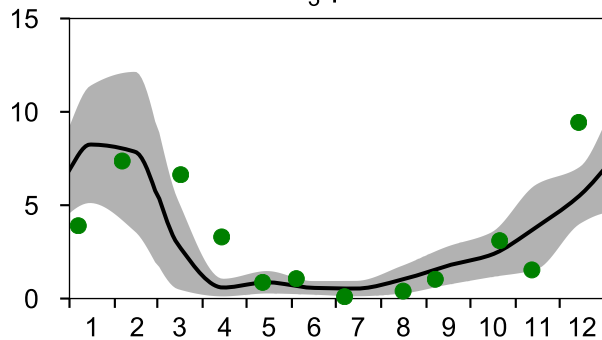
PO₄ µmol/l



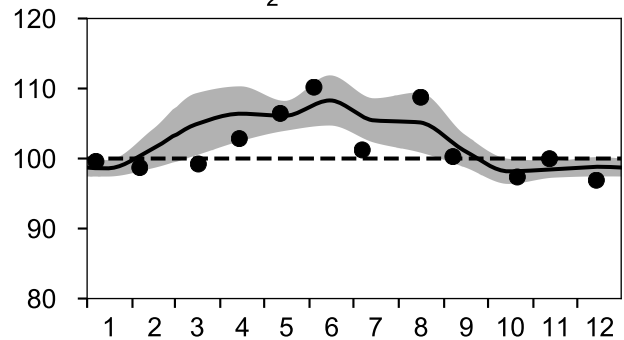
DIN µmol/l



SiO₃ µmol/l

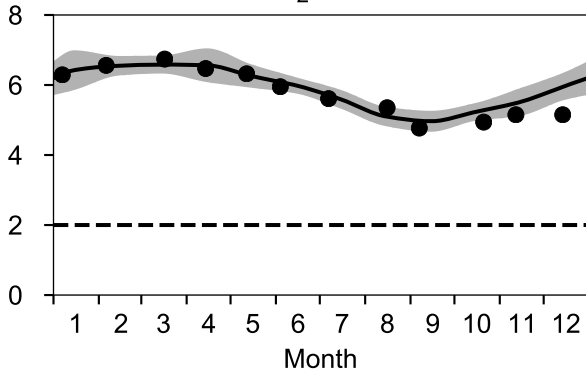


O₂ saturation %

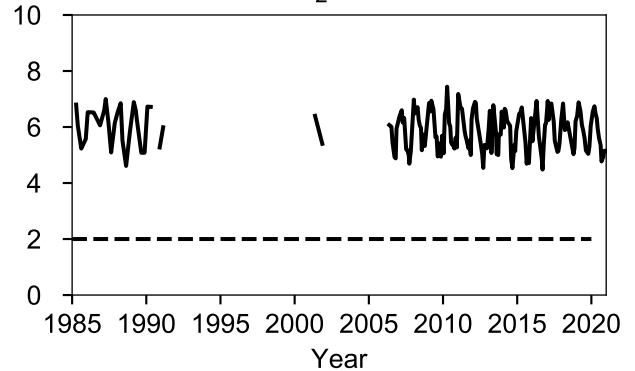


OXYGEN IN BOTTOM WATER (depth >= 80 m)

O₂ ml/l

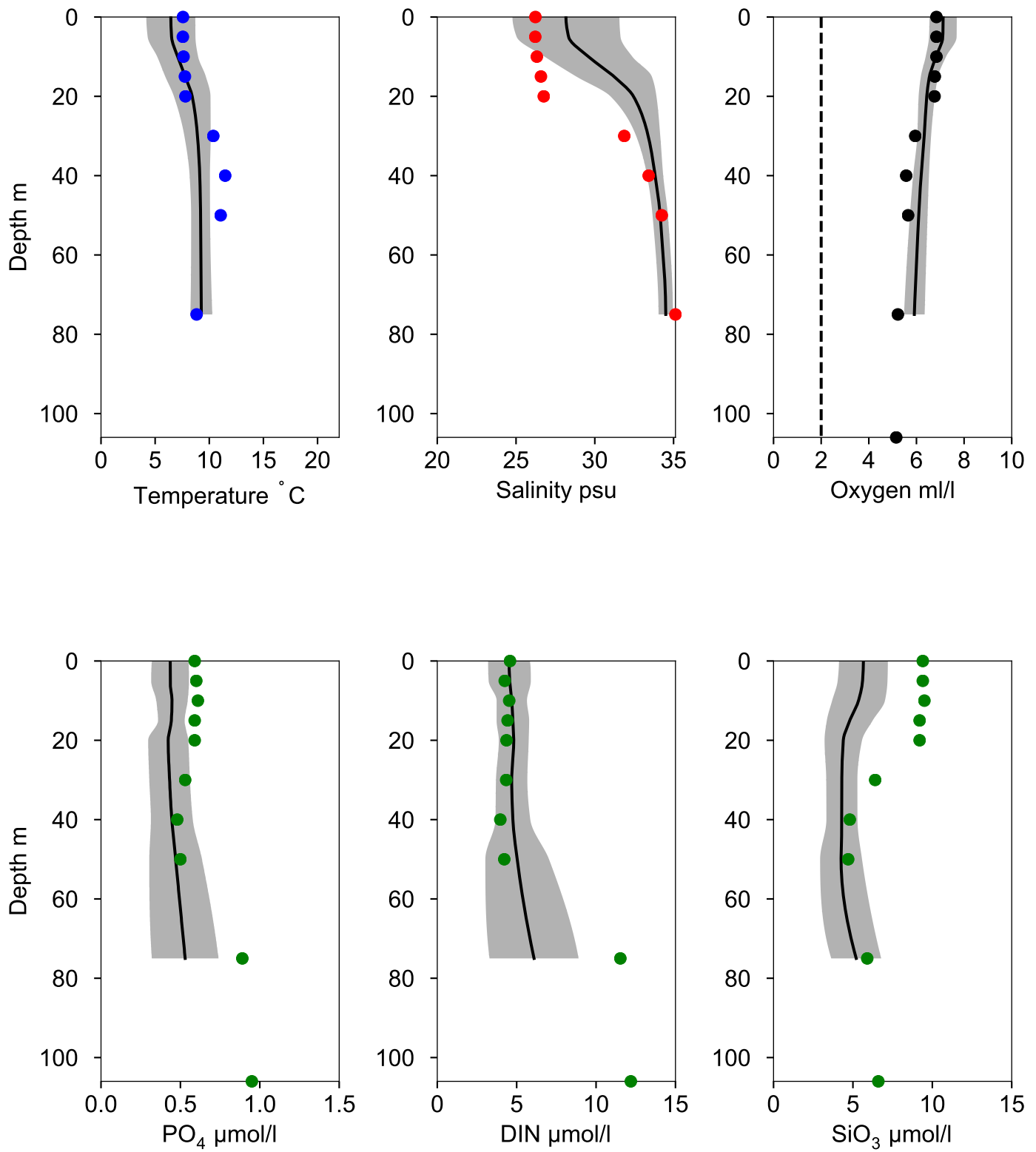


O₂ ml/l



Vertical profiles Å13 December

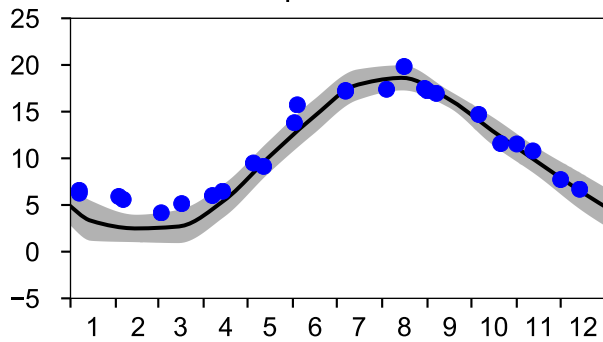
— Mean 2001-2015 St.Dev. • 2020-12-14



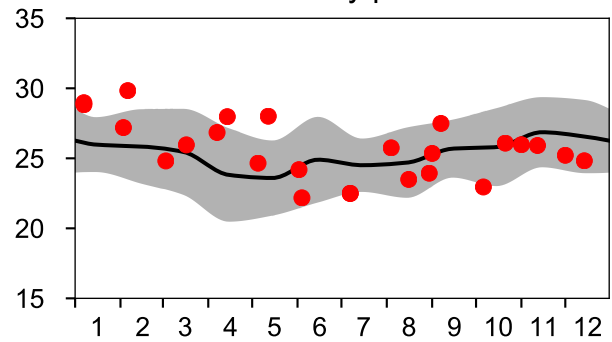
STATION SLÄGGÖ SURFACE WATER (0-10 m)

Annual Cycles

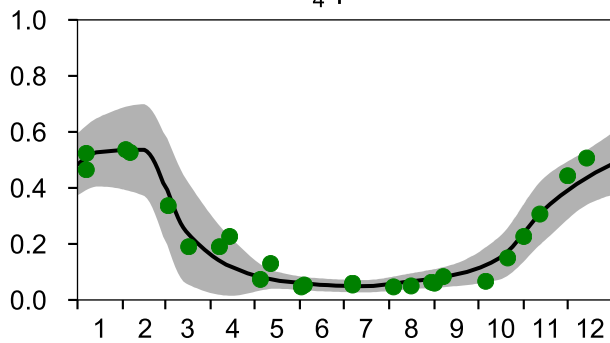
— Mean 2001-2015
Temperature °C



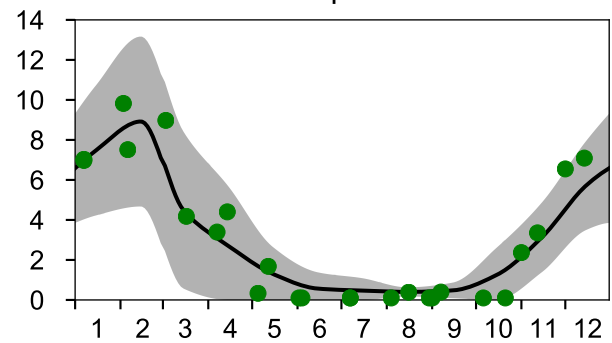
■ St.Dev. ● 2020
Salinity psu



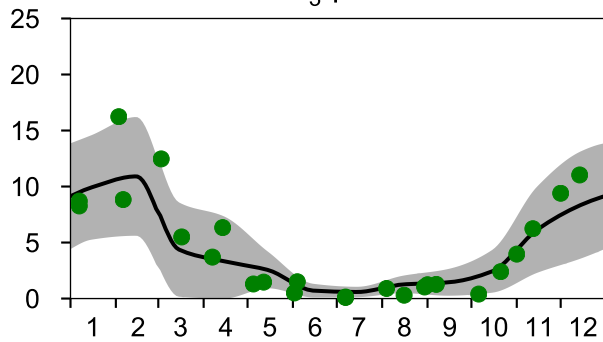
PO₄ µmol/l



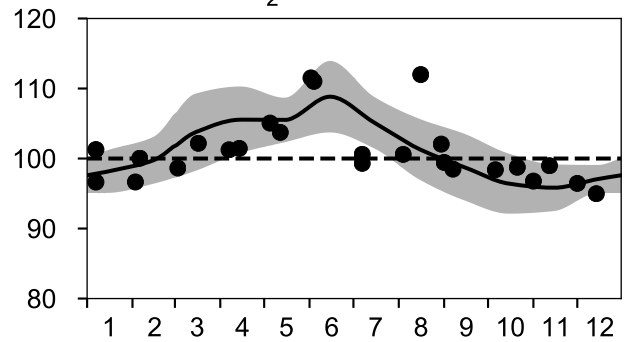
DIN µmol/l



SiO₃ µmol/l

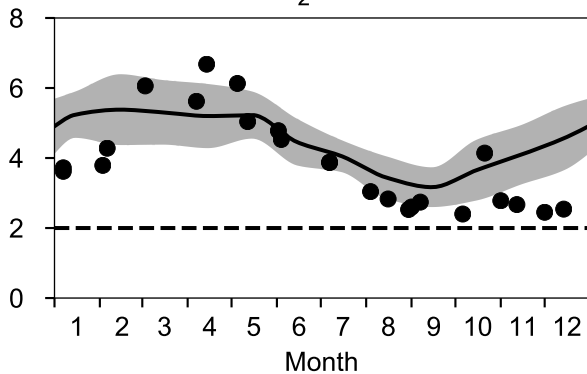


O₂ saturation %

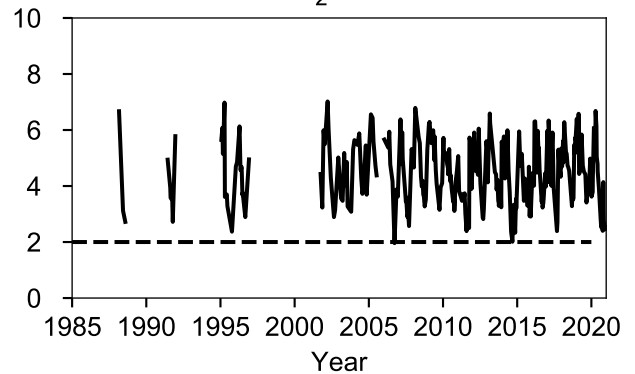


OXYGEN IN BOTTOM WATER (depth >= 64 m)

O₂ ml/l



O₂ ml/l



Vertical profiles SLÄGGÖ December

— Mean 2001-2015

■ St.Dev.

● 2020-12-14

