

Rapport från SMHIs utsjöexpedition med R/V Aranda



Expeditionens varaktighet: 2017-02-09 - 2017-02-17
Uppdragsgivare: Sveriges Meteorologiska och Hydrologiska Institut,
Havs- och Vattenmyndigheten.

SAMMANFATTNING

Under expeditionen, som ingår i det svenska pelagiala övervakningsprogrammet, besöktes Skagerrak, Kattegatt, Öresund och Egentliga Östersjön. I Östersjön gjordes vinterkartering av närsalter.

Samtliga närsalter i ytvattnet var generellt normala för årstiden förutom i Östersjön där halterna av silikat var högre eller mycket högre än normalt. Temperaturen i ytvattnet var normal för årstiden förutom i Skagerrak där det var något kallare. Salthalten i ytvattnet var lägre än normalt i Skagerrak och Kattegatt och normal till något över det normala i Egentliga Östersjön.

I stora delar av Egentliga Östersjöns djupvatten påträffades syrgashalter nära noll. Vid stationerna i västra Gotlandsbassängen uppmättes svavelväte från 80 till 100 meter, vid BY31 Landsortsdjupet återfanns svavelväte vid 125 meter medan det inte mättes något svavelväte på BY29 den här gången. Mellan BY29 och BY15 i östra Gotlandsbassängen återfanns svavelväte endast närmast botten på BY21 och från 215 meter på BY15. Akut syrebrist, < 2 ml/l, noterades från 65-85 meters djup i hela Egentliga Östersjön. I Hanöbukten var det akut syrebrist från 70 meter, medan det uppmättes syrehalter på över 2 ml/l i Bornholmsbassängens bottenvatten.

Fluorescensmätningar visade att en blomning pågick i ytlagret Skagerrak och Kattegatt.

Nästa ordinarie expedition planeras starta 9:e mars.

RESULTAT

Expeditionen genomfördes ombord på det finska forskningsfartyget Aranda och startade i Helsingfors den 9:e februari och avslutades i Åbo/Turku den 17:e. Vinden var svag till måttlig och från varierande riktning under expeditionen.

Under expeditionen ersattes en vågboj på Knolls grund med en ny.

Denna rapport är baserad på data som genomgått en första kvalitetskontroll. När data publiceras hos datavärden kan vissa värden ha ändras då ytterligare kvalitetsgranskning genomförts. Data från denna expedition publiceras så fort som möjligt på datavärdens hemsida, normalt sker detta inom en till två veckor efter avslutad expedition.

Data kan hämtas här: <http://www.smhi.se/klimatdata/oceanografi/havsmiljodata>

Skagerrak

Temperaturen i ytvattnet i Skagerrak var lägre än normalt för årstiden och varierade mellan 0,7 och 2,0°C, medan salthalten var betydligt lägre än normalt, 19,7-25,9 psu. Termoklin och haloklin sammanföll kring 10-25 meters djup.

Halten av oorganiskt kväve (nitrat+ nitrit+ammonium) i ytan var något lägre än normalt och låg mellan 4,48 och 5,13 µmol/l. Silikatkoncentrationerna i ytvattnet var generellt lägre än normalt och varierade mellan 7,2 och 8,9 µmol/l. Fosfathalterna var något högre än normalt och låg mellan 0,55 och 0,59 µmol/l i ytvattnet.

Bottenvattnet var väl syresatt och lägsta halten uppmättes till 6,1 ml/l.

Fluorescensmätningar visade att det pågick en blomning i ytlagret.

Kattegatt och Öresund

Temperaturen i Kattegatts ytvatten var normal för årstiden och varierade mellan 1,4 och 2,2°C. Salthalten i ytvattnet var lägre än normalt för årstiden och varierade mellan 21 psu i de norra delarna och 8 psu i Öresund. I Kattegatt sammanföll termoklin och haloklin kring 15 meters djup. Öresund var starkare skiktat på 15m med relativt låg salthalt, 8 psu, i ytskiktet och 31 psu i undre lagret.

Fosfatkoncentrationerna i ytan var normala till något över det normala och varierade mellan 0,57 och 0,63 µmol/l, summan av oorganiskt kväve i ytvattnet var normal för årstiden och varierade mellan 4,27 och 5,20 µmol/l. Silikathalterna i ytan varierade mellan 8,6 och 13,7 µmol/l, högst i Öresund och var normala till något över det normala för årstiden.

Djupvattnet var väl syresatt i hela Kattegatt och Öresund vilket är normalt så här års, lägsta halterna närmast botten uppmättes till 6,1 ml/l.

Fluorescensmätningar visade på viss planktonaktivitet i hela området.

Egentliga Östersjön

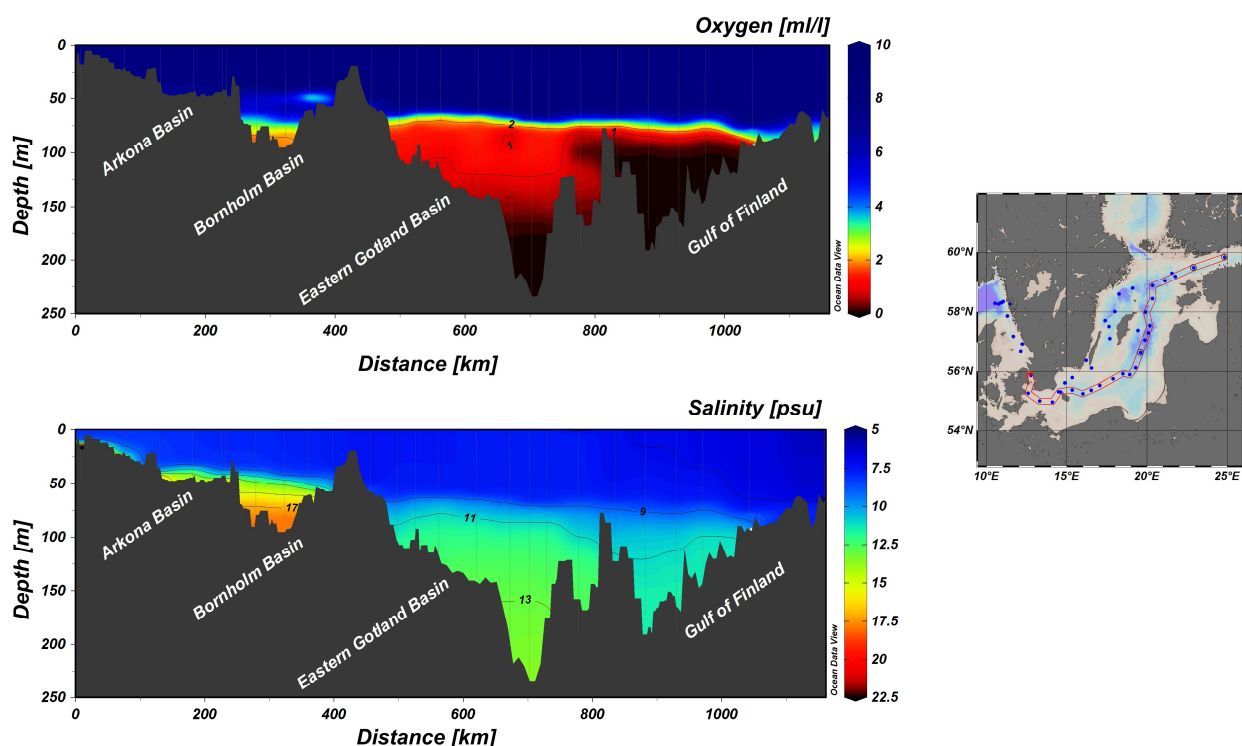
Temperaturen i ytvattnet var normal för årstiden och varierade mellan 1,9 och 3,6°C. Salthalten i ytvattnet var normal till något högre än normalt i hela det undersökta området. Variationerna i ytsalthalt var 6,9–8,0 psu med lägst salthalt i norra Gotlandsbassängen och högst i Arkonabassängen. Ytlagret var nu väl omblandat ner till 60-80 meter, i de sydvästra delarna var ytlagret något tunnare, 40-50 meter.

Vinterkartering av närsalter gjordes i området, se figur 2 för en sammanställning av karteringen. Fosfathalterna var normala till något över det normala för årstiden, halterna varierade mellan 0,65 och 0,96 $\mu\text{mol/l}$. Halterna av oorganiskt kväve var normala förutom i de södra och sydvästra delarna där de var över det normala, variationerna var mellan 3,62 och 7,54 $\mu\text{mol/l}$, lägst i västra Gotlandsbassängen och högst i Arkonabassängen. Silikatkoncentrationerna var fortsatt över till mycket över det normala, halterna varierade mellan 13,5 och 21,1 $\mu\text{mol/l}$

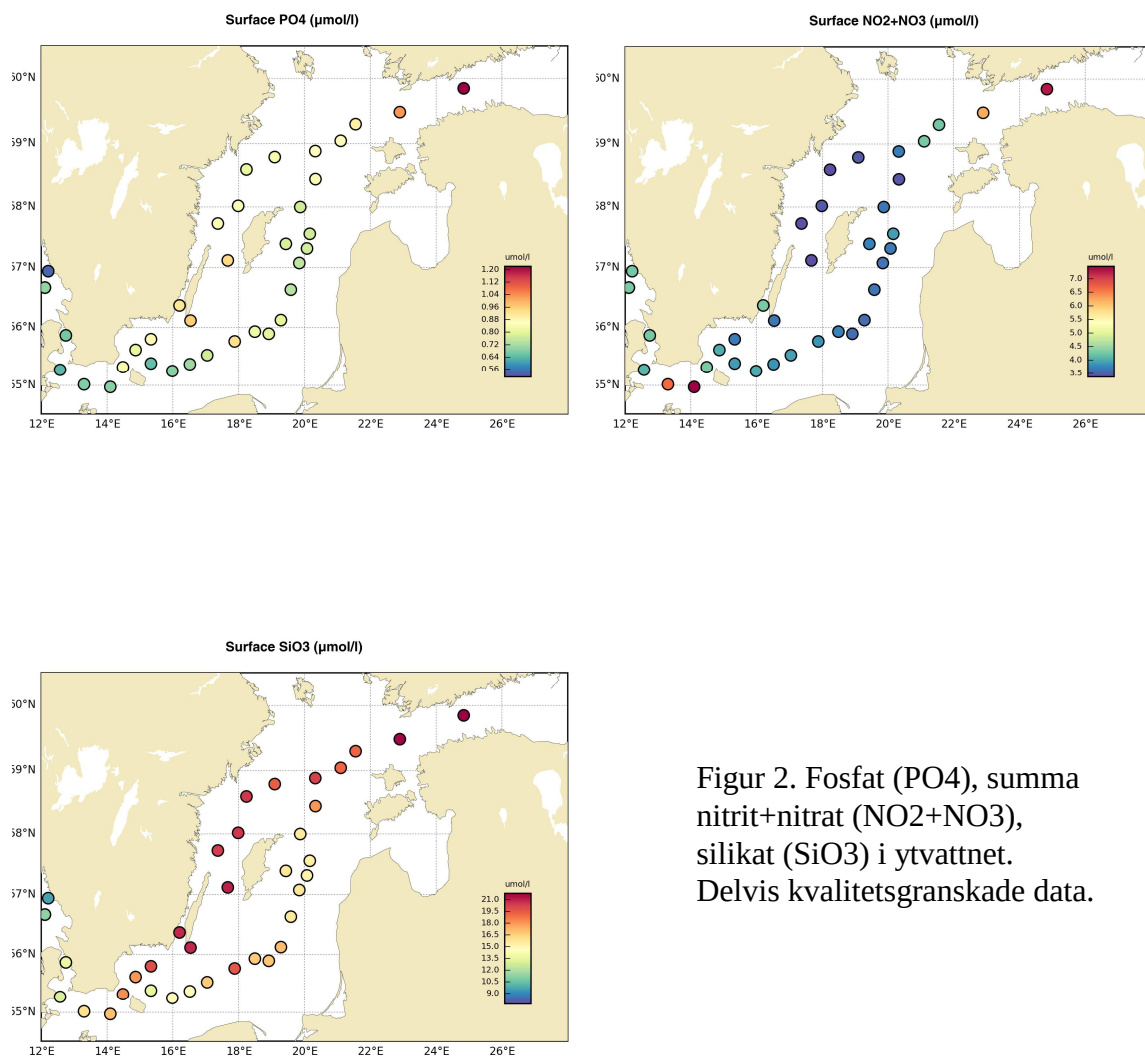
I stora delar av Egentliga Östersjöns djupvatten påträffades syrgashalter nära noll. Vid stationerna i västra Gotlandsbassängen uppmättes svavelväte från 80 till 100 meter, vid BY31 Landsortsdjupet återfanns svavelväte vid 125 meter medan det inte mättes något svavelväte på BY29 den här gången. Mellan BY29 och BY15 i östra Gotlandsbassängen återfanns svavelväte endast närmast botten på BY21 och från 215 meter på BY15. Akut syrebrist, < 2 ml/l, noterades från 65-85 meters djup i hela Egentliga Östersjön.

I Hanöbukten var det akut syrebrist från 70 meter, medan det uppmättes syrehalter på över 2 ml/l i Bornholmsbassängens bottenvatten.

Fluorescensmätningarna visade att planktonaktiviteten var mycket låg i hela området.



Figur 1. Snitt som visar syre- och salthalt genom Egentliga Östersjön från Öresund, genom östra Gotlandsbassängen till finska viken.



Figur 2. Fosfat (PO₄), summa nitrit+nitrat (NO₂+NO₃), silikat (SiO₃) i ytvattnet. Delvis kvalitetsgranskade data.

DELTAGARE

Namn

Anna-Kerstin Thell
Kristin Andreason
Sara Johansson
Johan Kronsell
Daniel Simonsson
Ann-Turi Skjevik

Expeditionsledare

Från

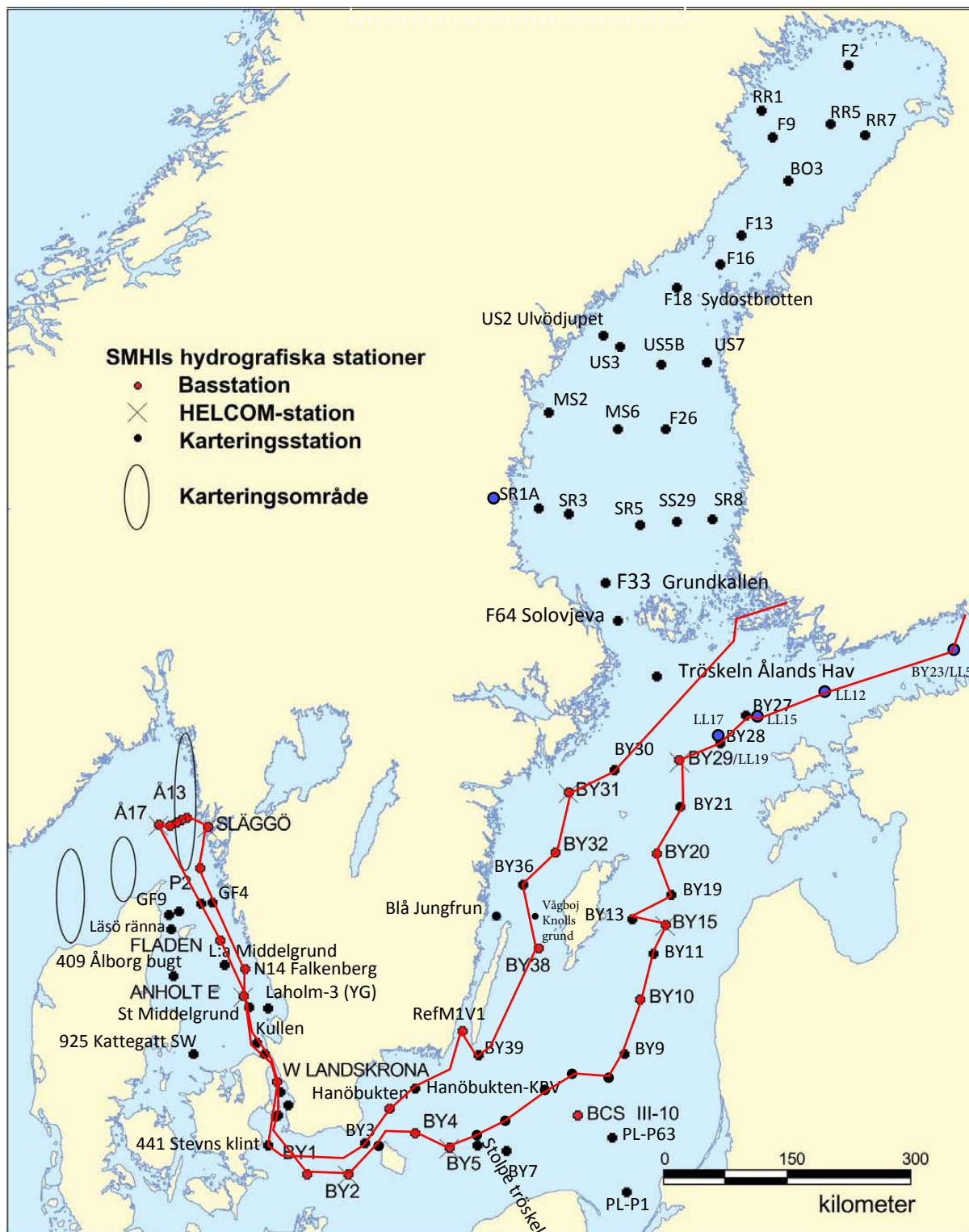
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BILAGOR

- Färdkarta
- Tabell över stationer, analyserade parametrar och antal provtagningsdjup
- Karta över syrehalter i bottenvattnet
- Vertikalprofiler för basstationer
- Figurer över månadsmedelvärden

TRACKCHART

Country: Sweden
 Ship: R/V ARANDA
 Date: 20170108-20170115
 Series: 0001-0033



Time: 13:43

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 aove	CZPP ho hoy	No de	No btl	T e	T e	S a	S a	P h	D o	D H	P P	N N	N N	A A	N A	S H	C C
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0095	3	GFX29	SYK	BY23 / LL7	5950.79	02450.27	20170209	1215	100		18 1	-5.9	1044	2810	x---	13 13			x x x x	-	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
0096	3	BPNX60	SYK	LL12	5929.01	02253.81	20170209	1820	84		09 5	-4.6	1044	9999	x---	11 11			x x x x	-	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
0097	3	BPNX62	SYK	LL15	5911.00	02144.81	20170209	2240	132		13 5	-3.9	1044	9990	----	1 1			x x x x	-	x x x x	-	-	-	-	-	-	-	-	-	-
0098	3	BPNX33	BAS	BY27	5917.93	02133.18	20170210	0010	180		12 5	-3.5	1044	9990	----	15 15			x x x x	-	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
0099	3	BPNX34	BAS	BY28	5902.50	02106.04	20170210	0300	200		11 7	-2.7	1044	9990	----	17 17			x x x x	-	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
0100	3	BPNX35	BAS	BY29 / LL19	5852.91	02019.67	20170210	0620	178		10 10	-1.5	1043	1130	x-x-	16 16			x x x x	-	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
0101	3	BPNX27	BAS	BY21	5826.51	02020.01	20170210	0930	122		13 8	-1.0	1043	1130	----	14 14			x x x x	-	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
0102	3	BPEX26	BAS	BY20 FÄRÖDJ	5759.89	01952.27	20170210	1300	203		11 7	-0.7	1042	1130	x--x	17 17			x x x x	x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
0103	3	BPEX00	BAS	BY19	5733.04	02009.65	20170210	1620	160		10 8	-0.5	1041	0030	----	15 15			x x x x	-	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
0104	3	BPEX19	BAS	BY13	5723.23	01926.02	20170210	1930	122		12 8	-0.4	1041	9990	----	14 14			x x x x	-	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
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0106	3	BPEX21	EXT																												

Time: 13:43

Year: 2017

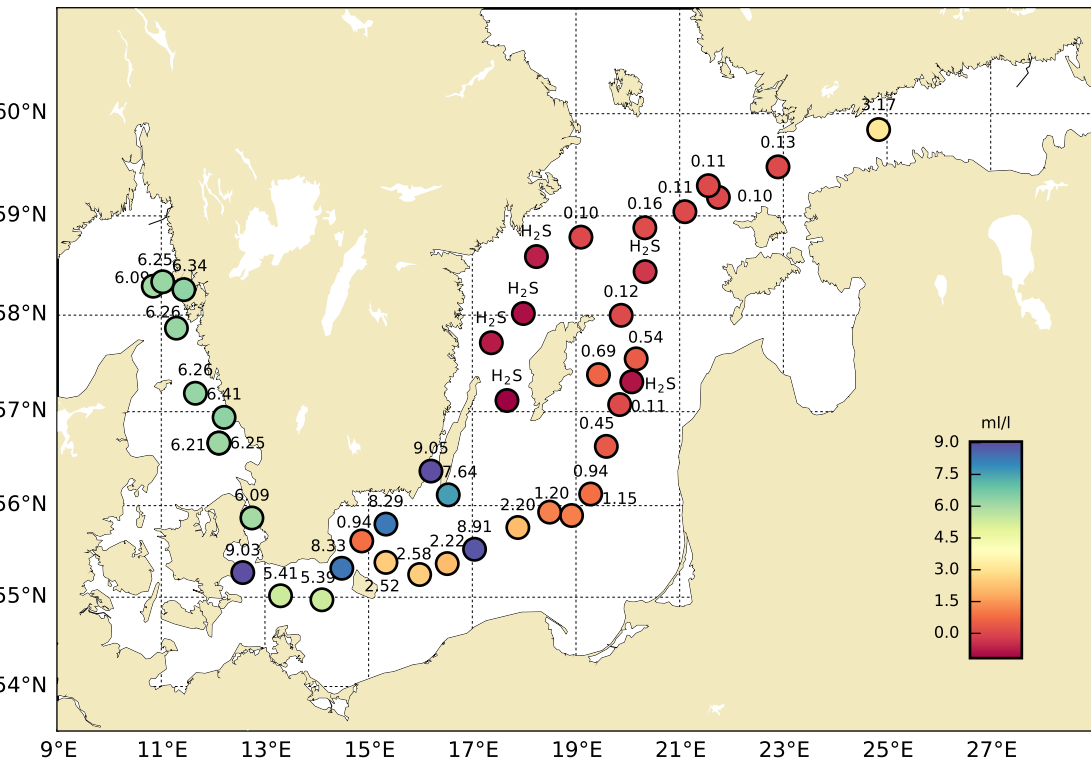
Ser no	Cru no	Stat code	Proj	Stat name	Lat	Lon	Start date yyyymmdd	Start time hhmm	Bottom depth m	Secchi depth m	Wind dir vel	Air temp C	Air pres hPa	WCVI elac aoe	CZPP hoehp loy	No de	No btl	T e m m p p t t l l	S a a h o o x x s s o o r r r r o o k k o m m m	P P N N N A N A S H C C	D D H P P N N N A S H C C	H h t t t t t m t l i u o o	P p p t t y y s t i a z n t y 3 u n n - s t t
0133	3	BPSA00	BAS	BY3 HAMRARNE SUND	5519.11	01428.95	20170215	0000	48		26 3	3.9	1035	9990	----	8 8	8	x x x x - x x x x x x x x x x - x - -					
0134	3	BPSH05	BAS	HANÖBUKTEN	5537.03	01452.04	20170215	0230	80		28 2	3.6	1034	9990	x---	11 11	11	x x x x - x x x x x x x x x x - x - -					
0135	3	BPSH51	BAS	HANÖBUKTEN-KBV	5548.02	01520.05	20170215	0445	60		00 0	2.0	1034	9990	----	9 9	9	x x x x - x x x x x x x x x x - x - -					
0136	3	BPWK01	BAS	REF MIV1	5622.25	01612.11	20170215	0925	21		00 0	1.0	1034	1101	xxxx	5 5	5	x x x x x x x x x x x x x x x x - -					
0137	3	BPSE49	BAS	BY39 ÖLANDS S UDDE	5606.98	01632.16	20170215	1205	50	15	22 5	3.0	1033	0020	----	8 8	8	x x x x - x x x x x x x x x x - x - -					
0138	3	BPWX45	BAS	BY38 KARLSÖDJ	5707.03	01740.12	20170215	1840	114		22 8	3.5	1029	9990	x-x-	14 14	14	x x x x - x x x x x x x x x x - x x -					
0139	3	BPWX00	EXT	Knolls grund	5730.86	01736.81	20170215	2315	90		23 8	3.3	1026	9990	----	12		- x - x - - x - - - - - - - - - x -					
0140	3	BPWX42	BAS	BY36	5743.01	01722.01	20170216	0110	140		24 6	2.7	1025	9990	----	15 15	15	x x x x - x x x x x x x x x x - x - -					
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Bottom water oxygen concentration (ml/l)

Ship: Aranda

Date: 20170209-20170217

Series: 0095-0143



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

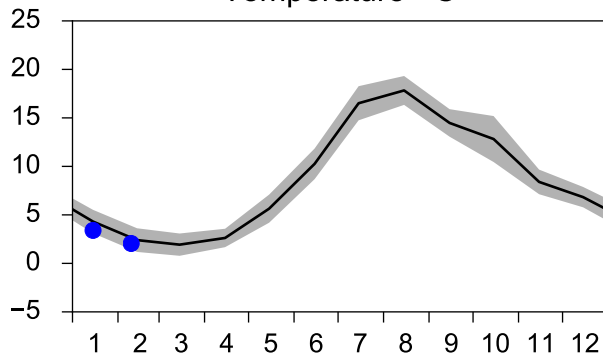
Annual Cycles

— Mean 2001-2015

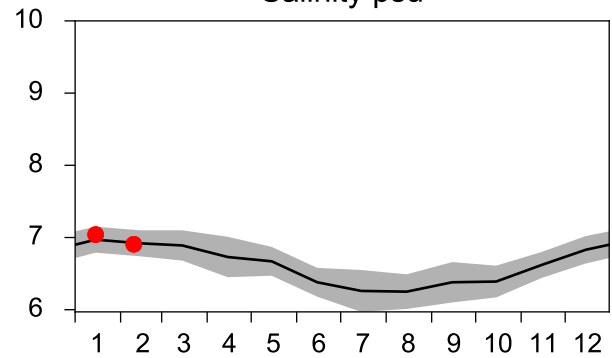
■ St.Dev.

● 2017

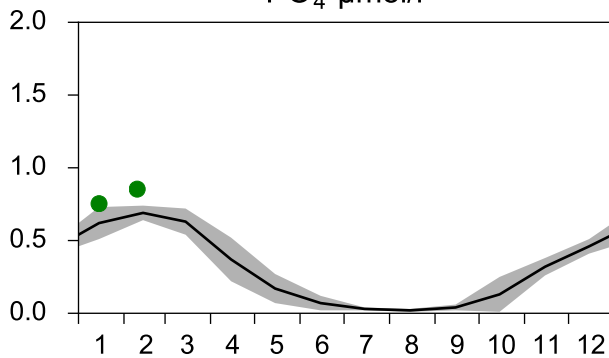
Temperature °C



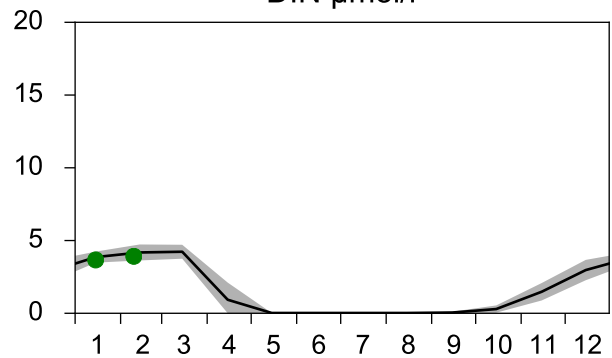
Salinity psu



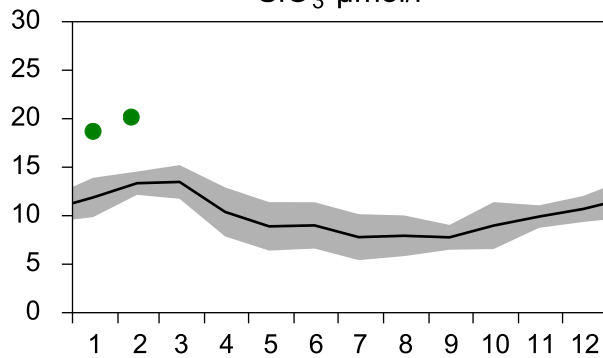
PO₄ μmol/l



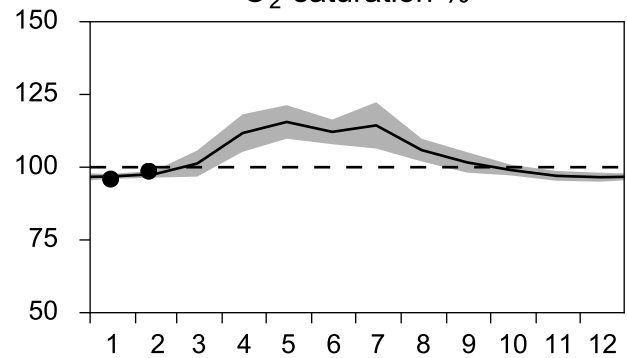
DIN μmol/l



SiO₃ μmol/l

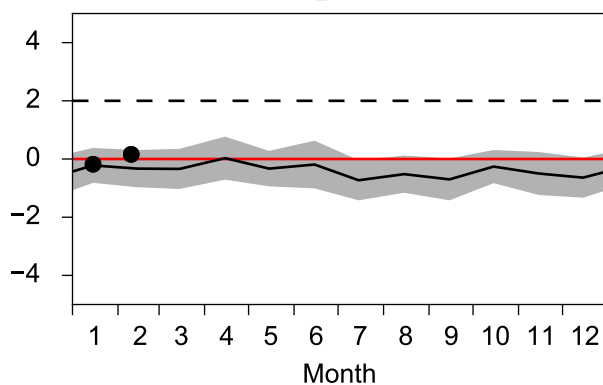


O₂ saturation %

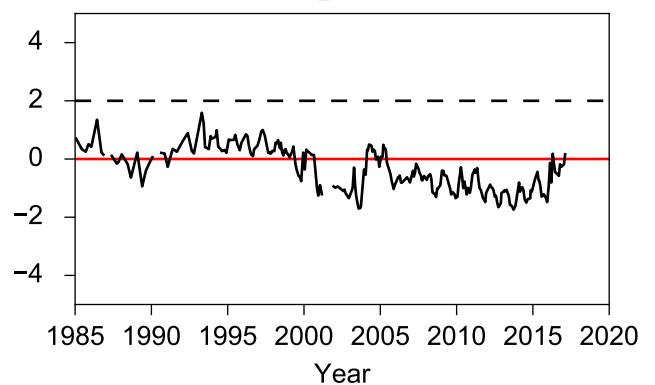


OXYGEN IN BOTTOM WATER (depth >= 150 m)

O₂ ml/l

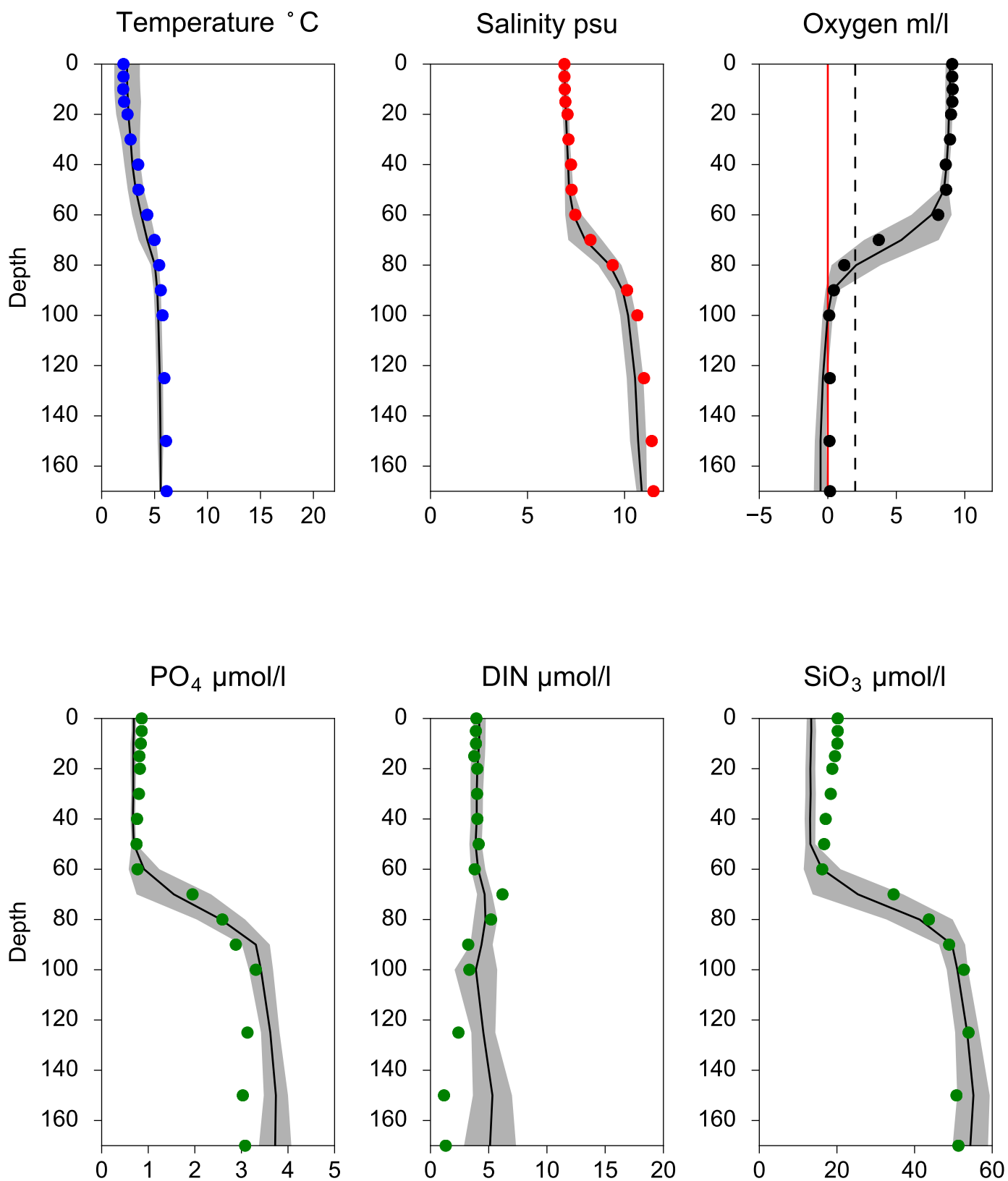


O₂ ml/l



Vertical profiles BY29 / LL19 February

— Mean 2001-2015 St.Dev. ● 2017-02-10



STATION BY20 FÅRÖDJ SURFACE WATER (0-10 m)

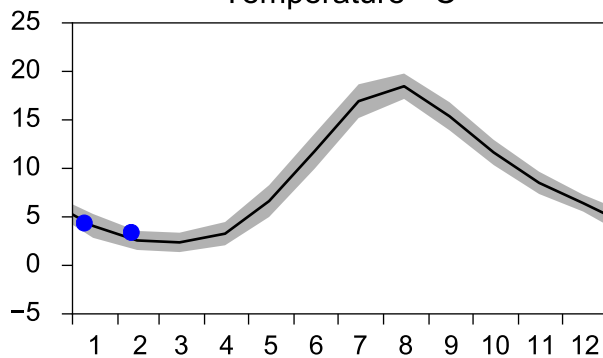
Annual Cycles

— Mean 2001-2015

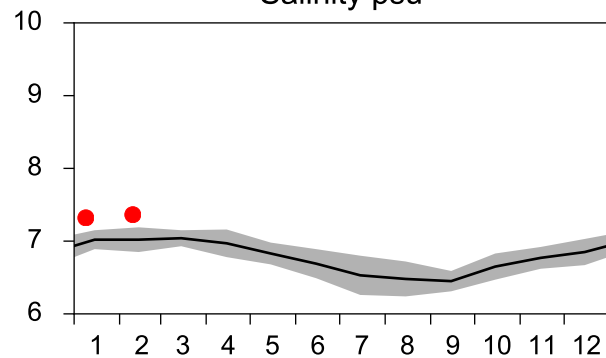
■ St.Dev.

● 2017

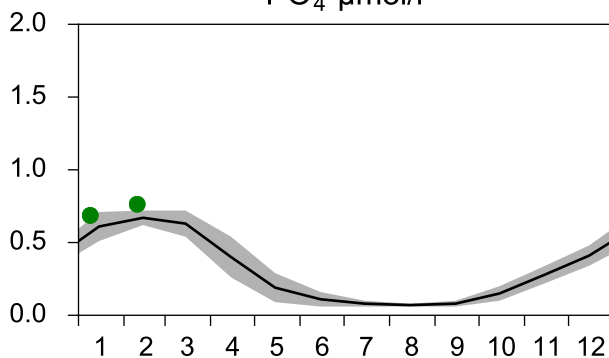
Temperature °C



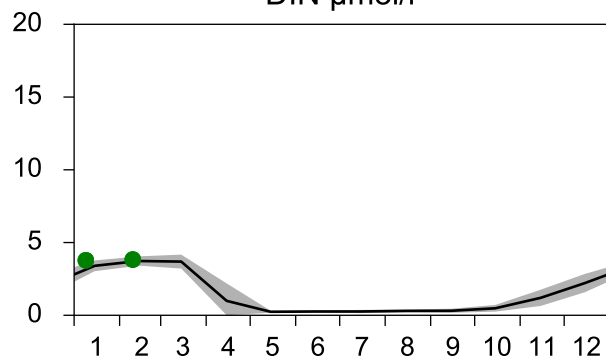
Salinity psu



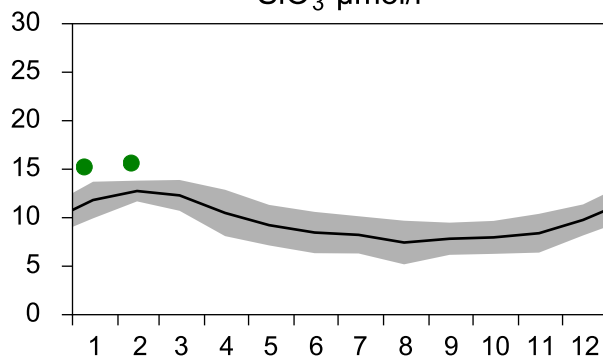
PO₄ µmol/l



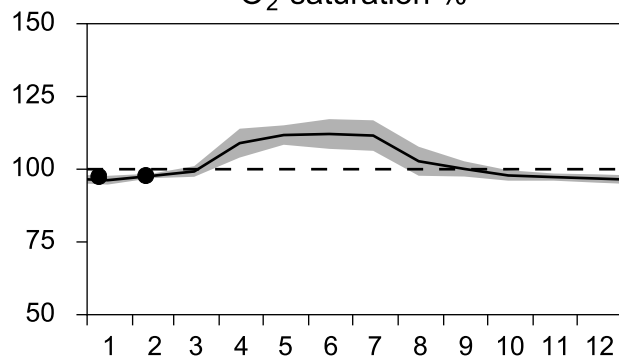
DIN µmol/l



SiO₃ µmol/l

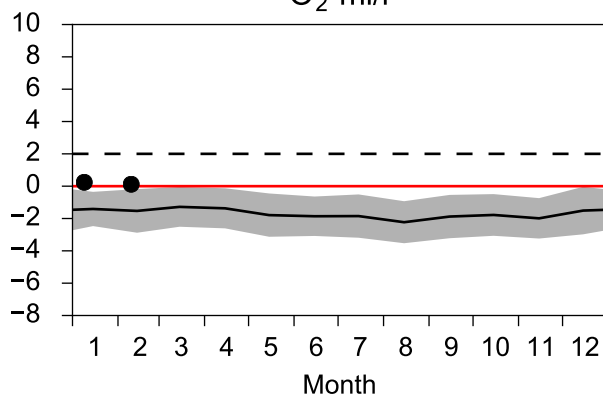


O₂ saturation %

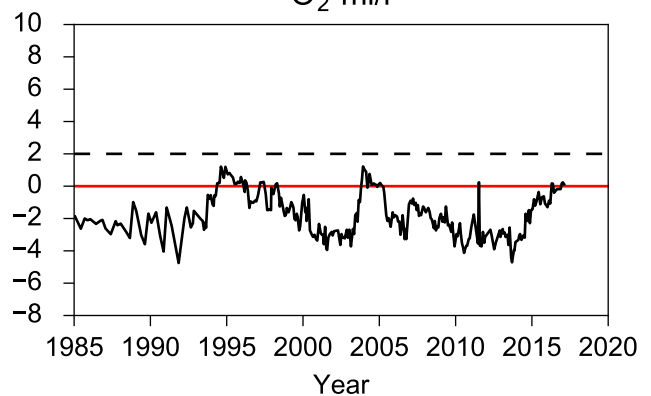


OXYGEN IN BOTTOM WATER (depth >= 175 m)

O₂ ml/l

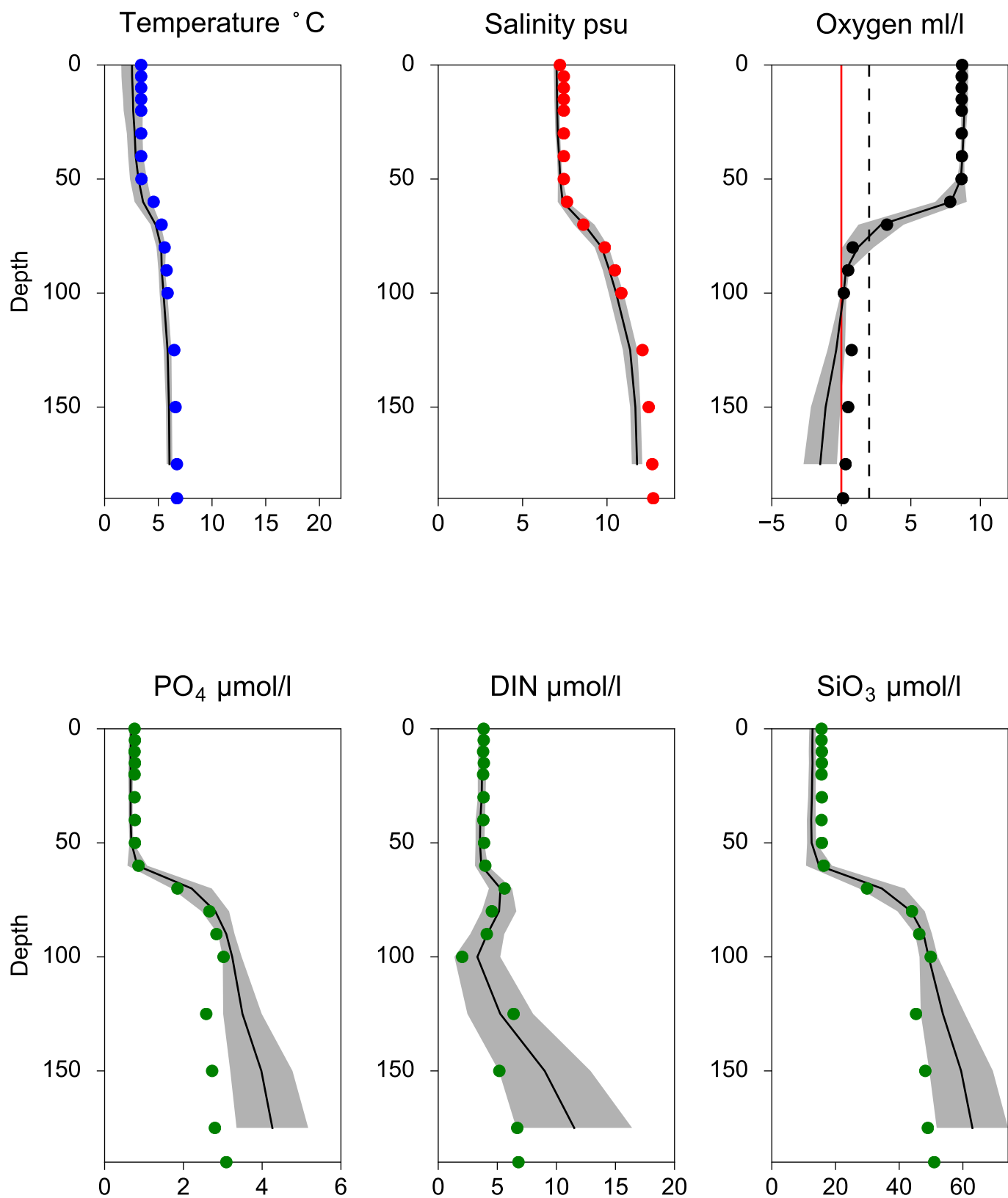


O₂ ml/l



Vertical profiles BY20 FÅRÖDJ February

— Mean 2001-2015 St.Dev. • 2017-02-10



STATION BY15 GOTLANDSDJ SURFACE WATER (0-10 m)

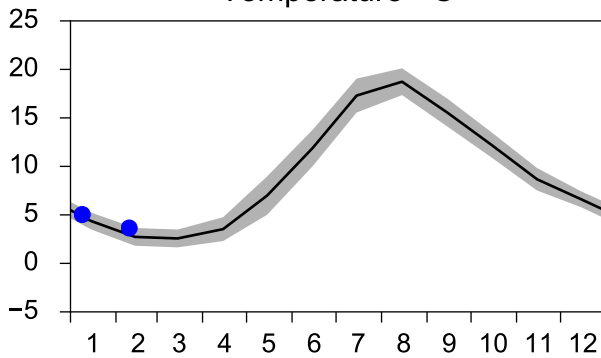
Annual Cycles

— Mean 2001-2015

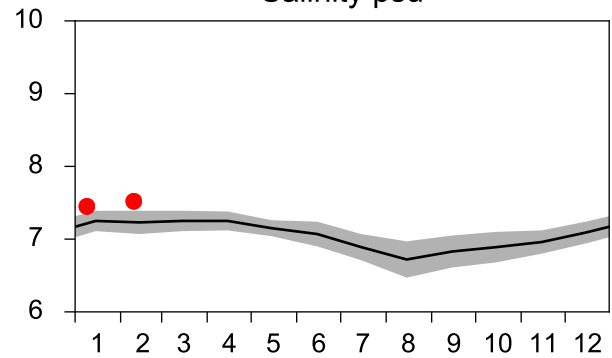
■ St.Dev.

● 2017

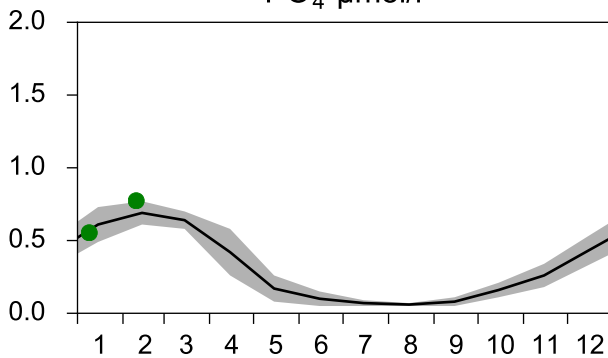
Temperature °C



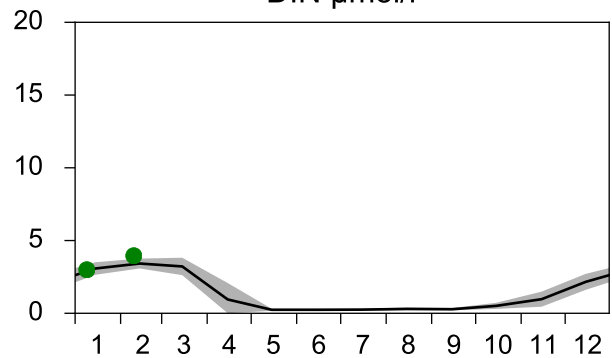
Salinity psu



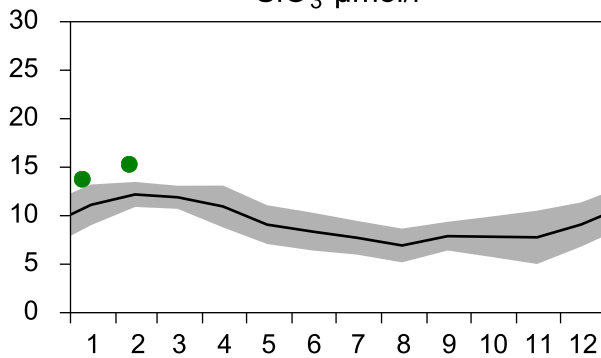
PO₄ µmol/l



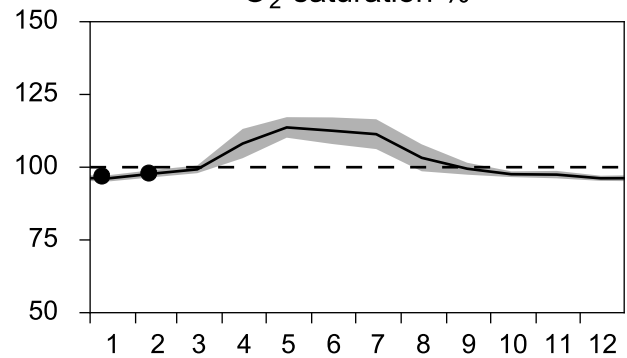
DIN µmol/l



SiO₃ µmol/l

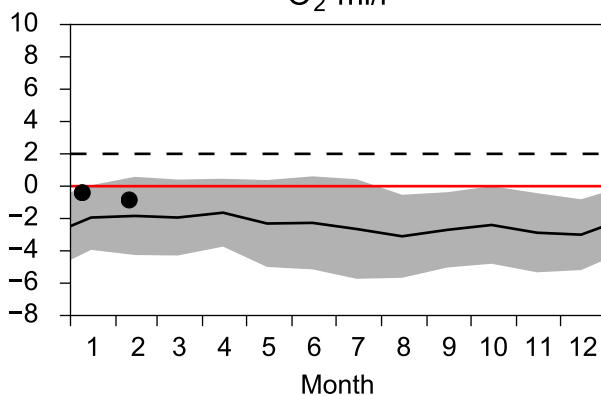


O₂ saturation %

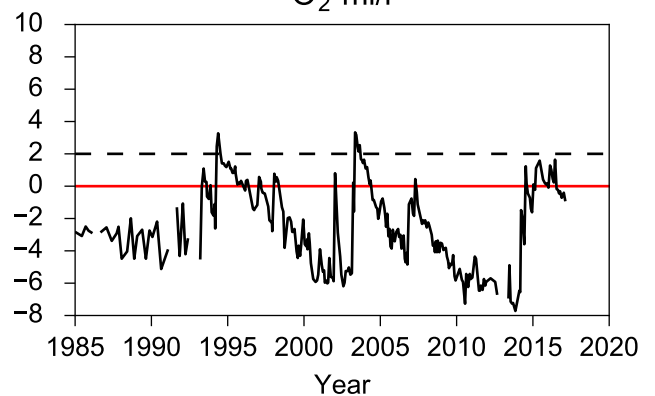


OXYGEN IN BOTTOM WATER (depth >= 225 m)

O₂ ml/l

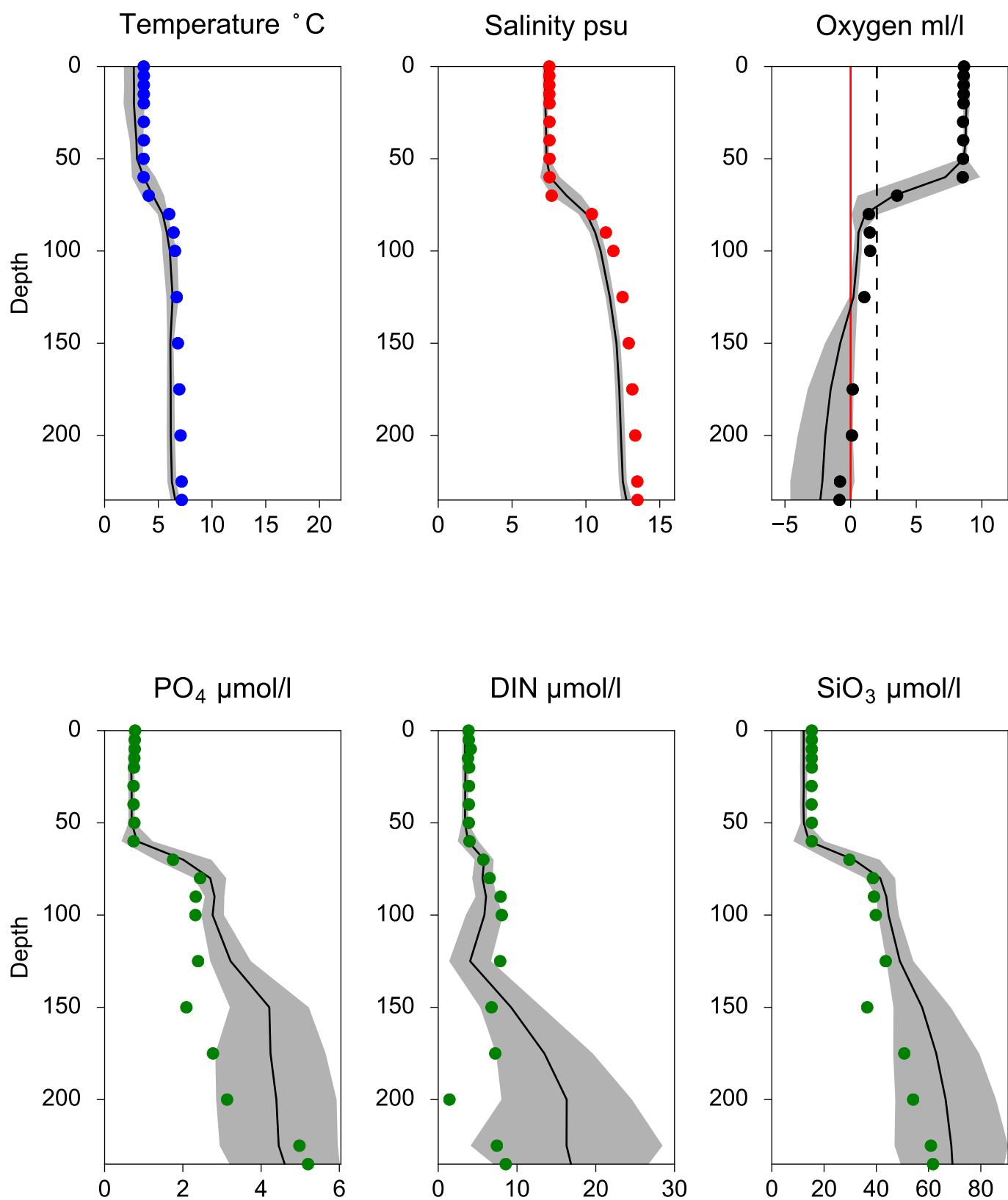


O₂ ml/l



Vertical profiles BY15 GOTLANDSDJ February

— Mean 2001-2015 St.Dev. • 2017-02-10



STATION BY10 SURFACE WATER (0-10 m)

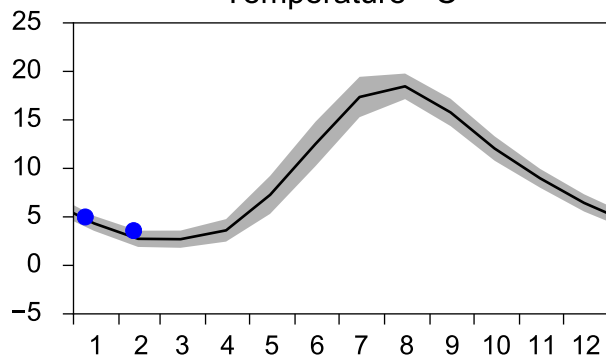
Annual Cycles

— Mean 2001-2015

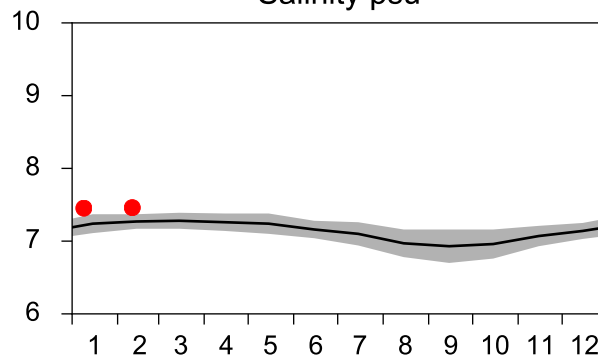
■ St.Dev.

● 2017

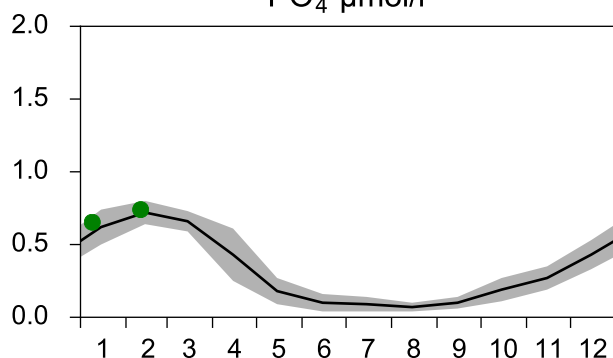
Temperature °C



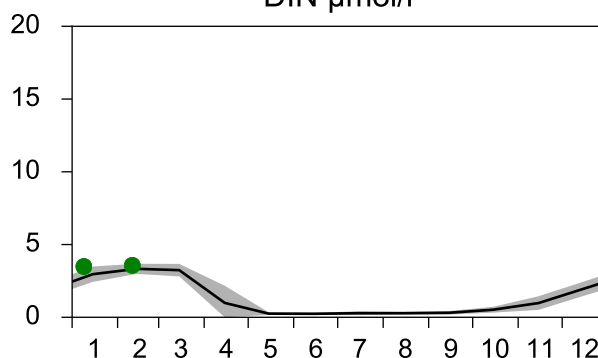
Salinity psu



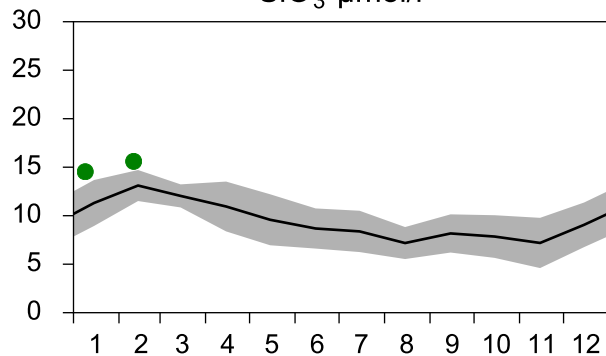
PO₄ μmol/l



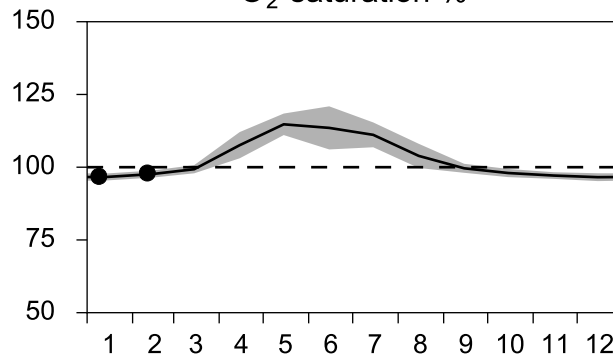
DIN μmol/l



SiO₃ μmol/l

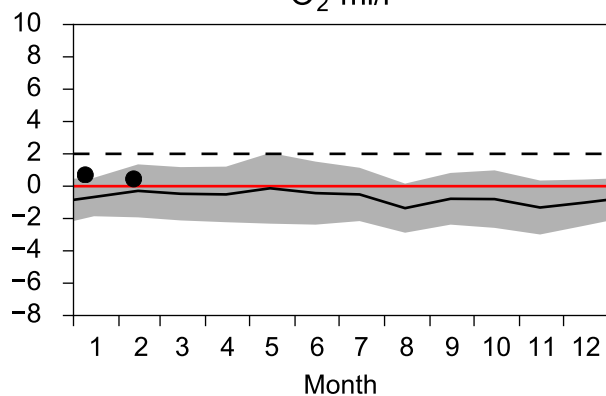


O₂ saturation %

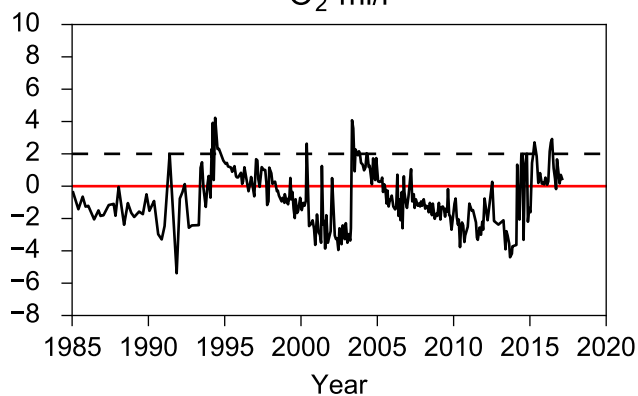


OXYGEN IN BOTTOM WATER (depth >= 125 m)

O₂ ml/l

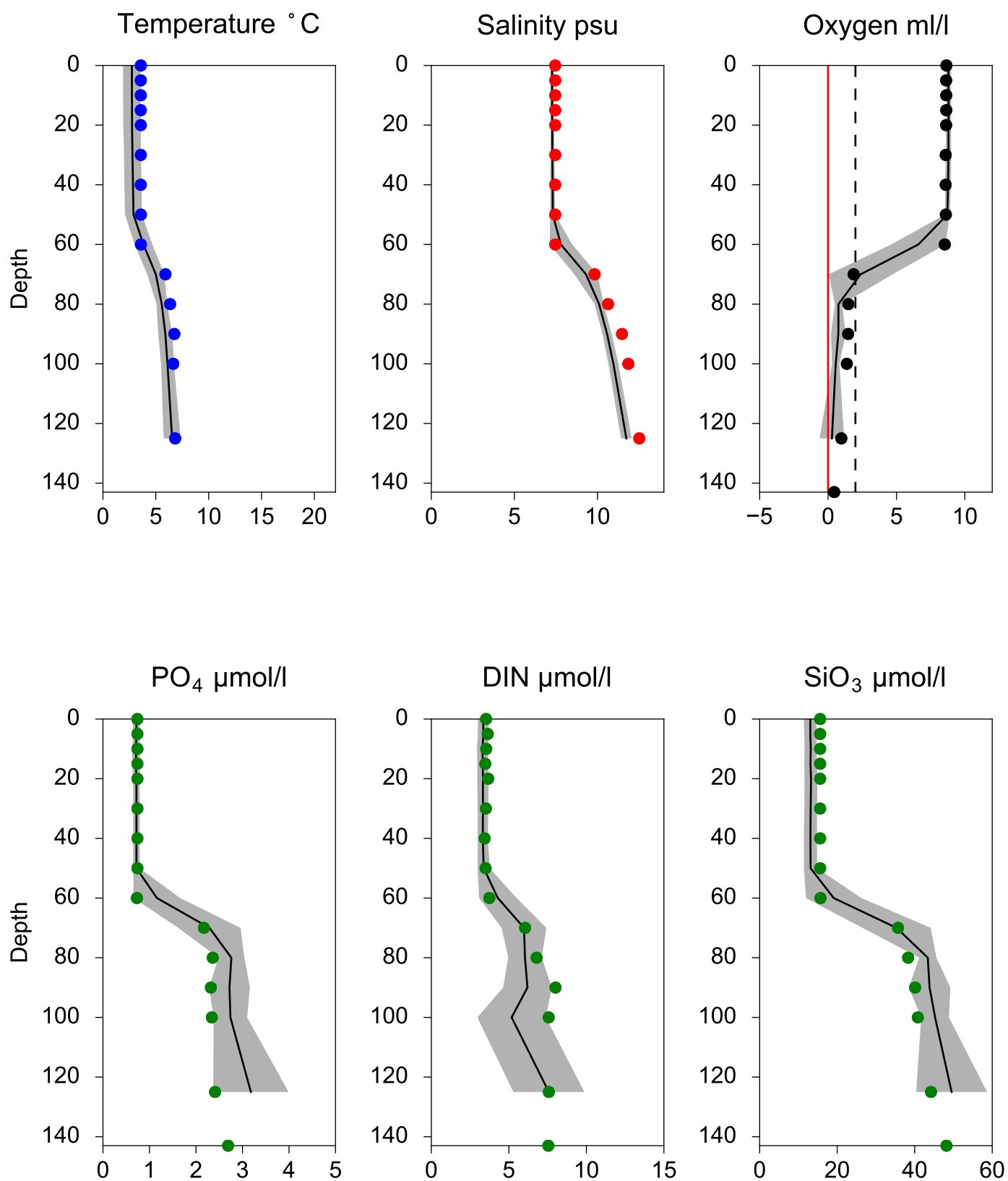


O₂ ml/l



Vertical profiles BY10 February

— Mean 2001-2015 St.Dev. • 2017-02-11



STATION BY5 BORNHOLMSDJ SURFACE WATER (0-10 m)

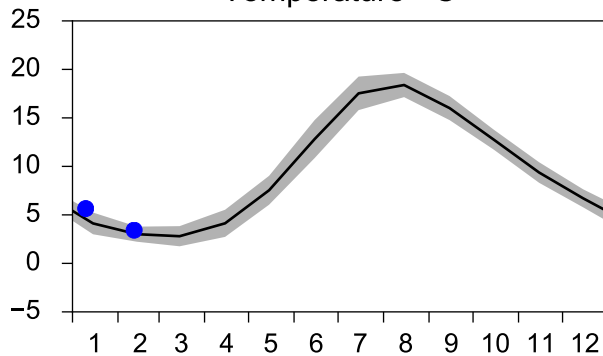
Annual Cycles

— Mean 2001-2015

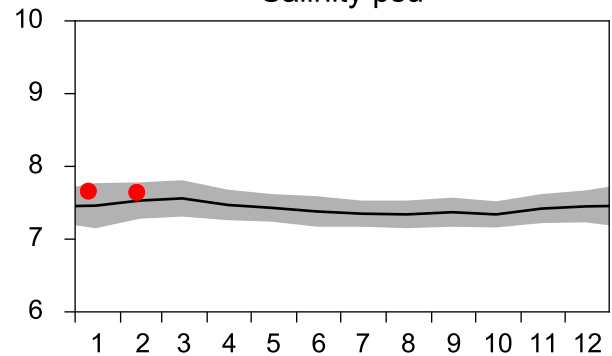
■ St.Dev.

● 2017

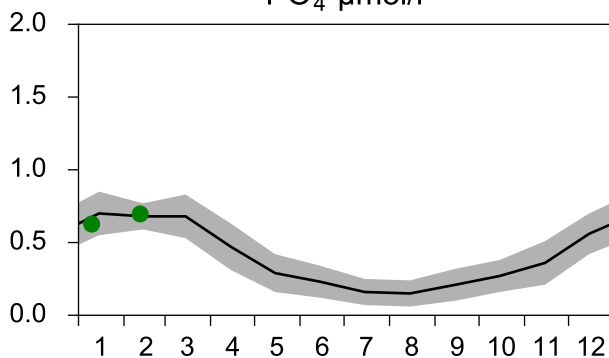
Temperature °C



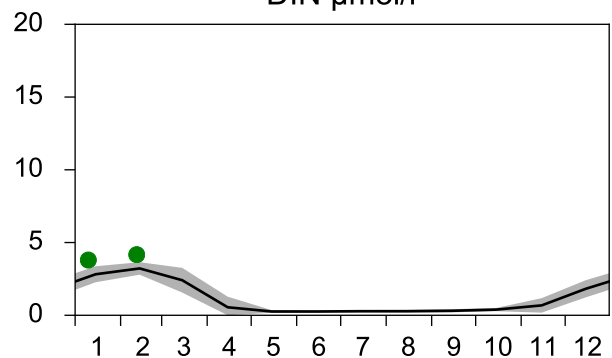
Salinity psu



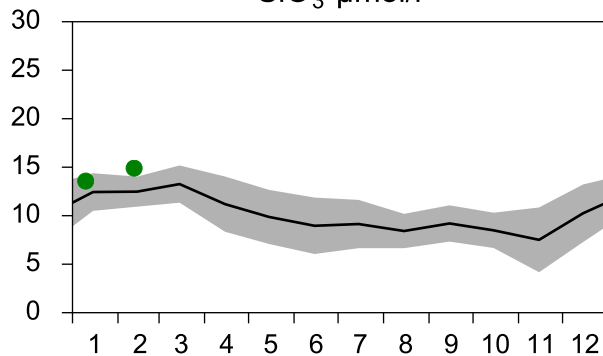
PO₄ μmol/l



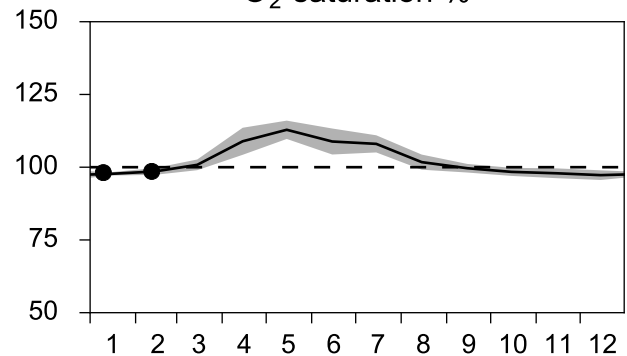
DIN μmol/l



SiO₃ μmol/l

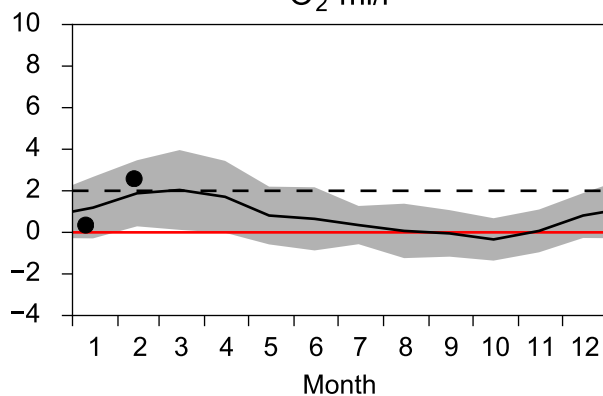


O₂ saturation %

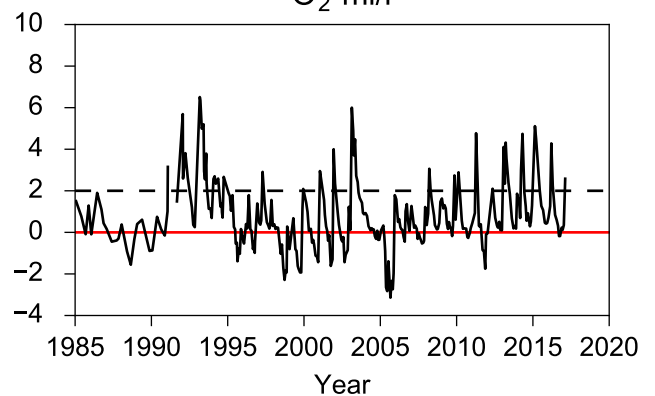


OXYGEN IN BOTTOM WATER (depth >= 80 m)

O₂ ml/l

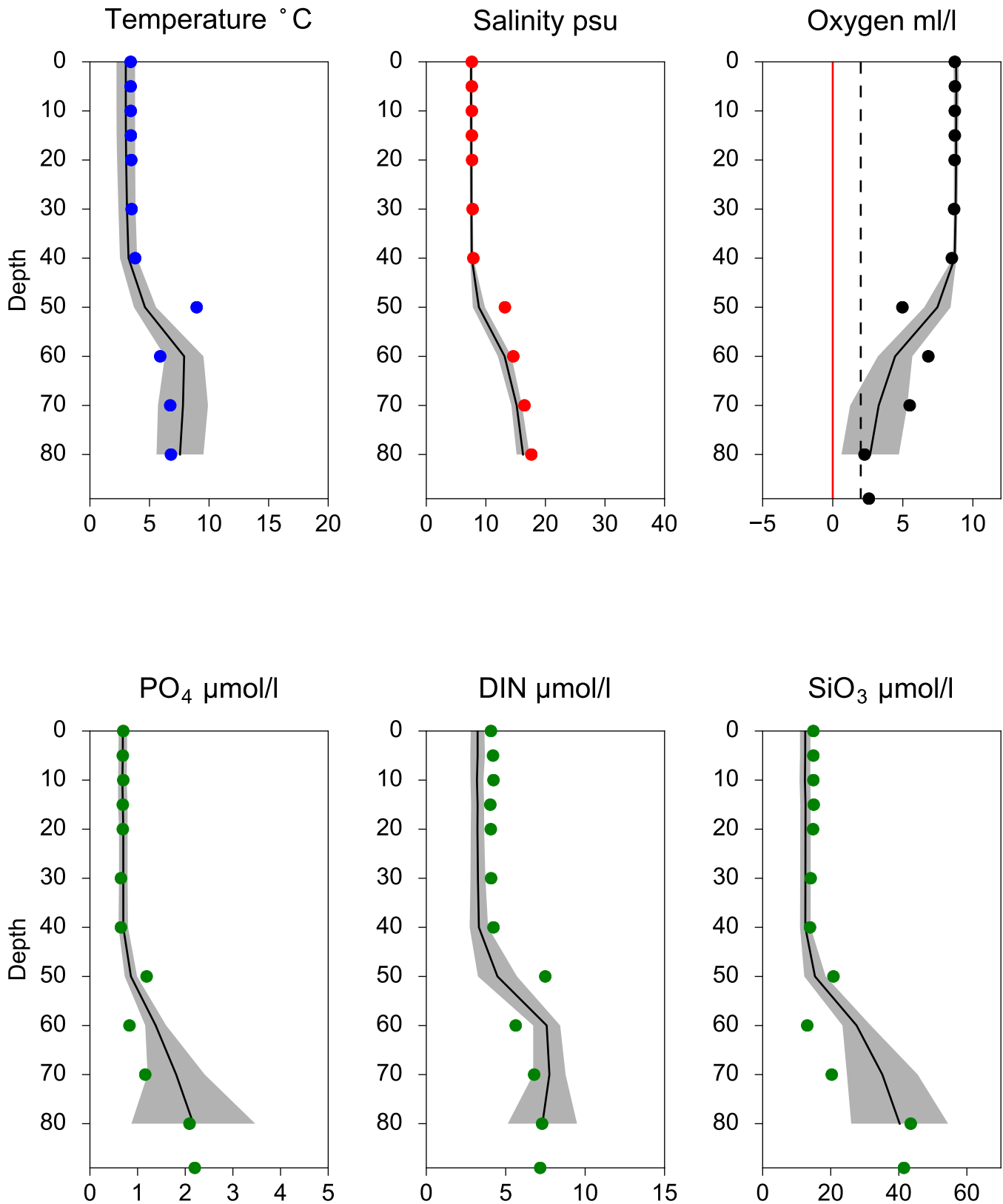


O₂ ml/l



Vertical profiles BY5 BORNHOLMSDJ February

— Mean 2001-2015 St.Dev. • 2017-02-12



STATION BY4 CHRISTIANSÖ SURFACE WATER (0-10 m)

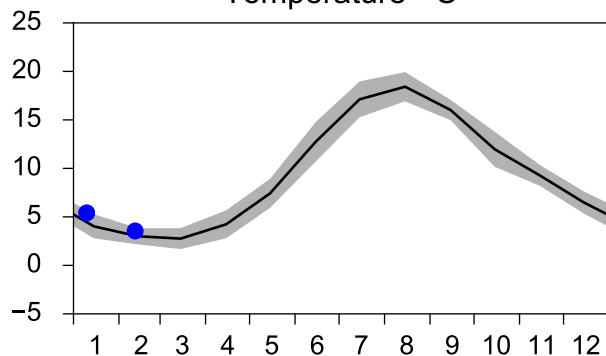
Annual Cycles

— Mean 2001-2015

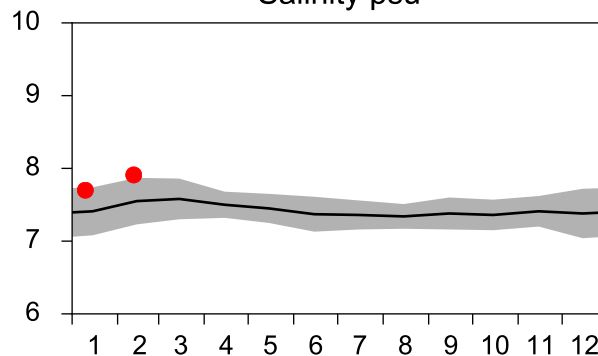
■ St.Dev.

● 2017

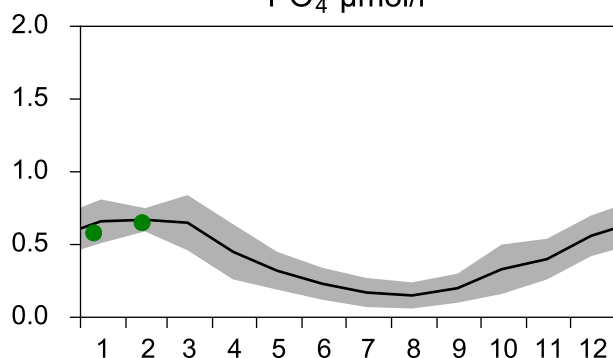
Temperature °C



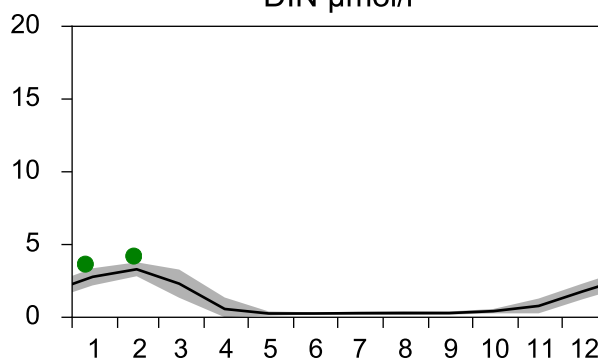
Salinity psu



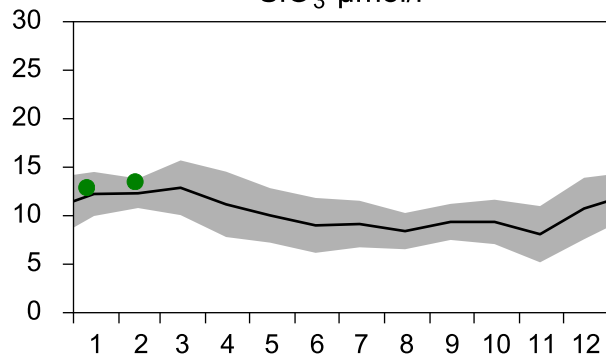
PO₄ µmol/l



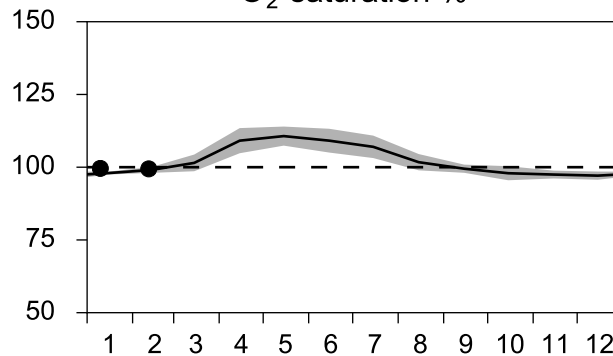
DIN µmol/l



SiO₃ µmol/l

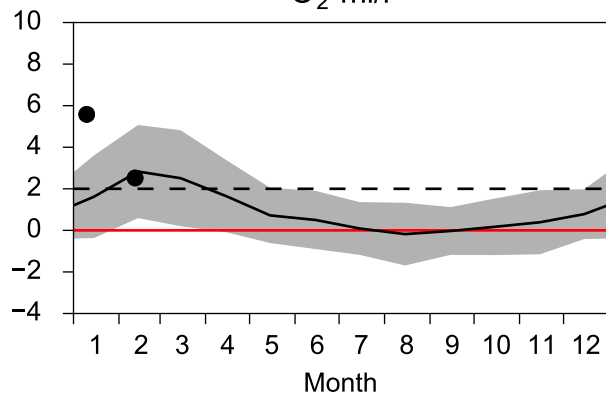


O₂ saturation %

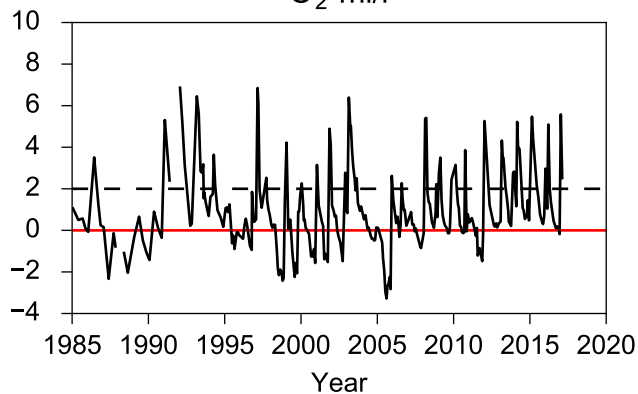


OXYGEN IN BOTTOM WATER (depth >= 80 m)

O₂ ml/l

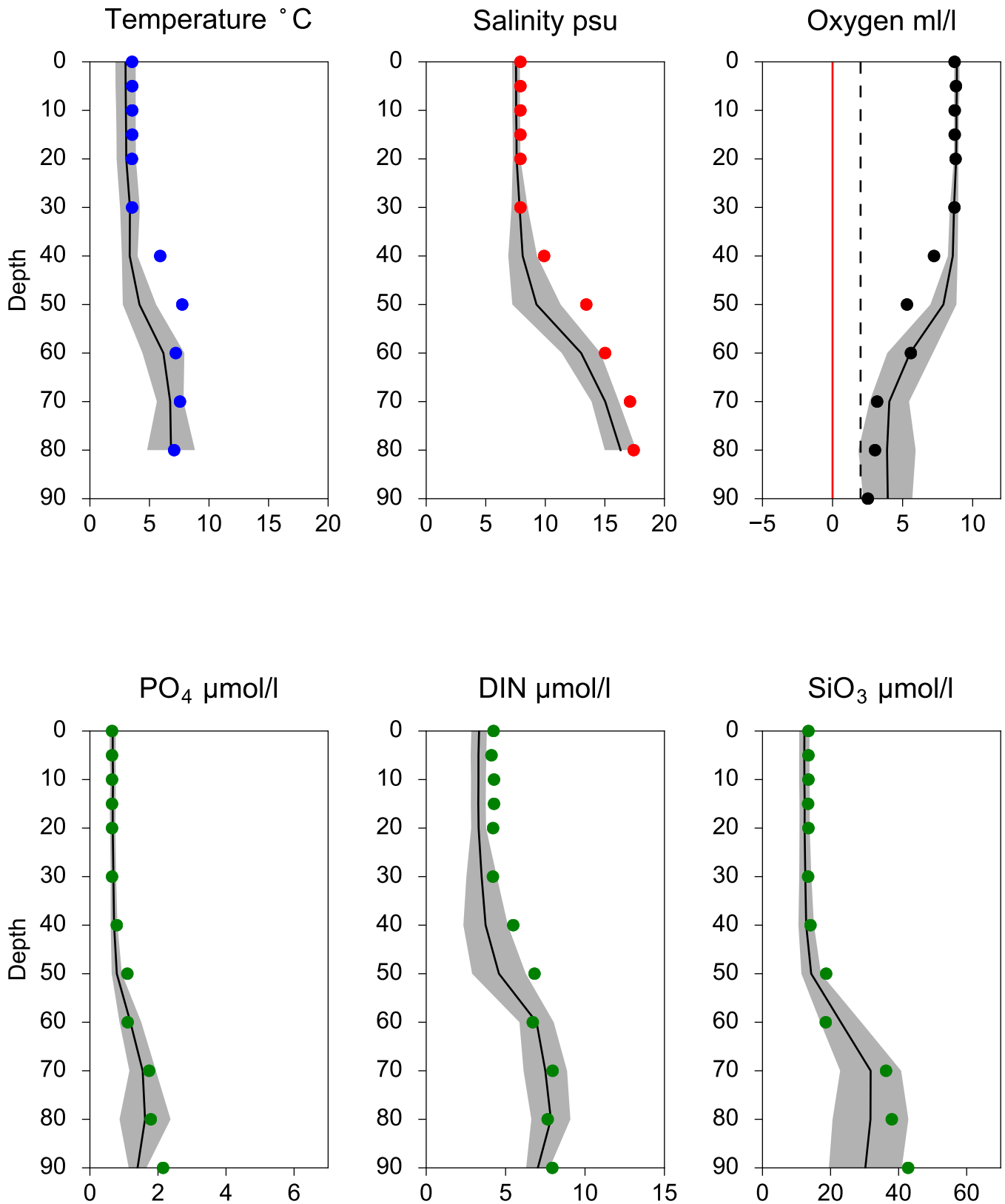


O₂ ml/l



Vertical profiles BY4 CHRISTIANSÖ February

— Mean 2001-2015 ■ St.Dev. ● 2017-02-12



STATION BY2 ARKONA SURFACE WATER (0-10 m)

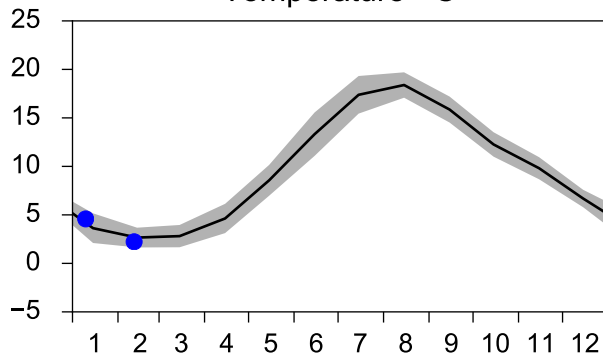
Annual Cycles

— Mean 2001-2015

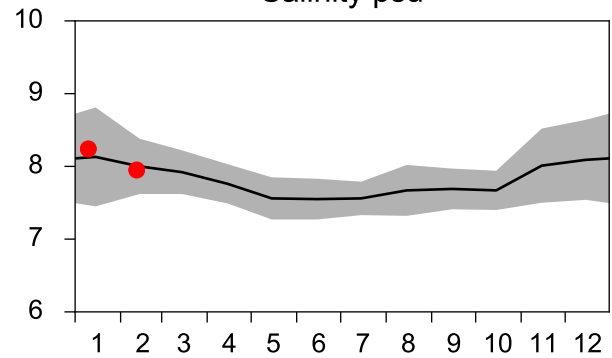
■ St.Dev.

● 2017

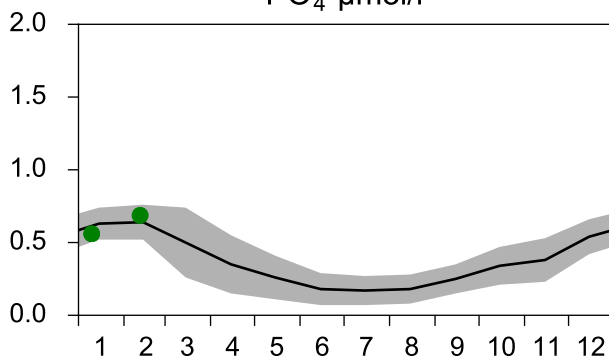
Temperature °C



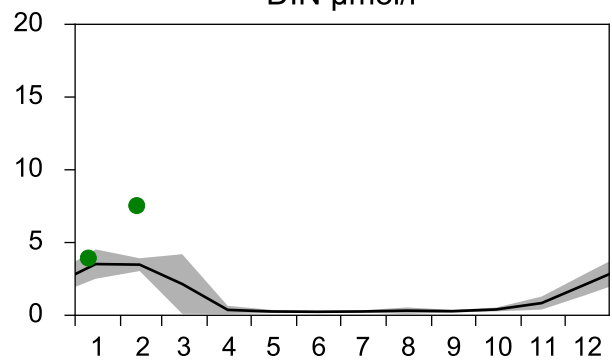
Salinity psu



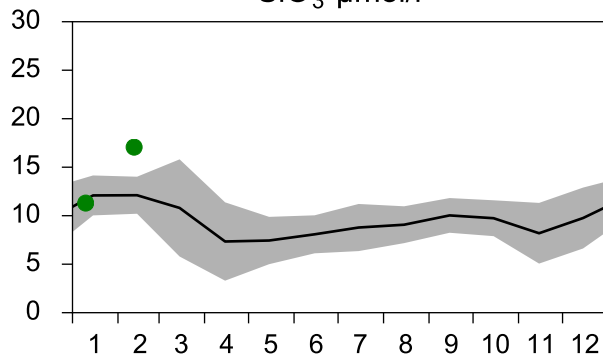
PO₄ µmol/l



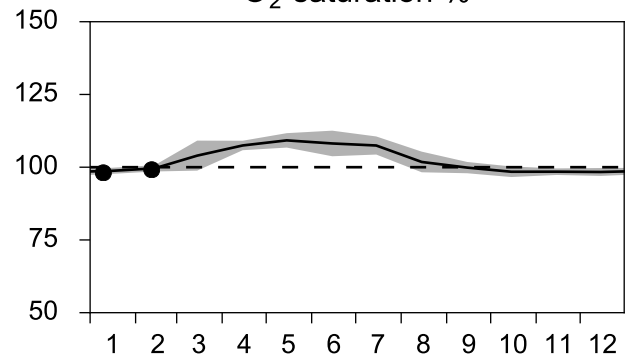
DIN µmol/l



SiO₃ µmol/l

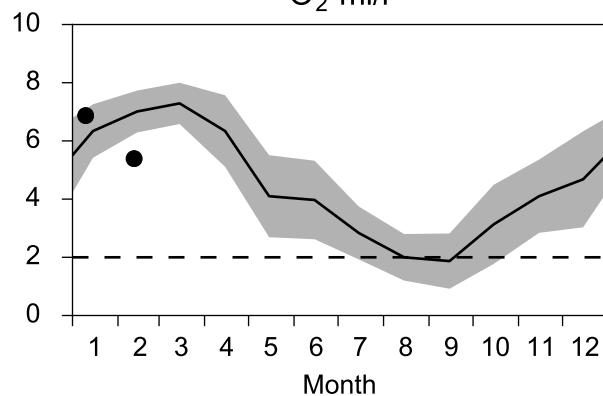


O₂ saturation %

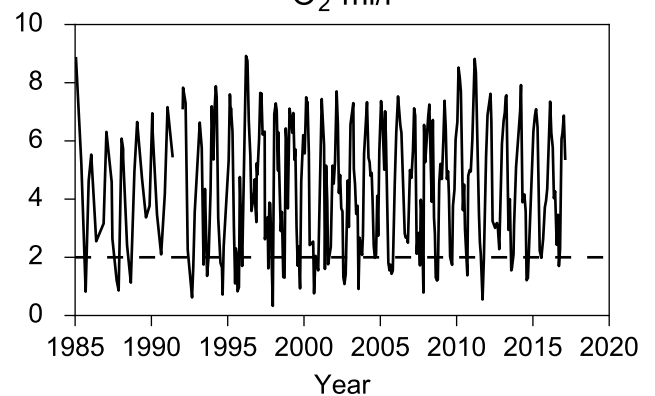


OXYGEN IN BOTTOM WATER (depth >= 40 m)

O₂ ml/l

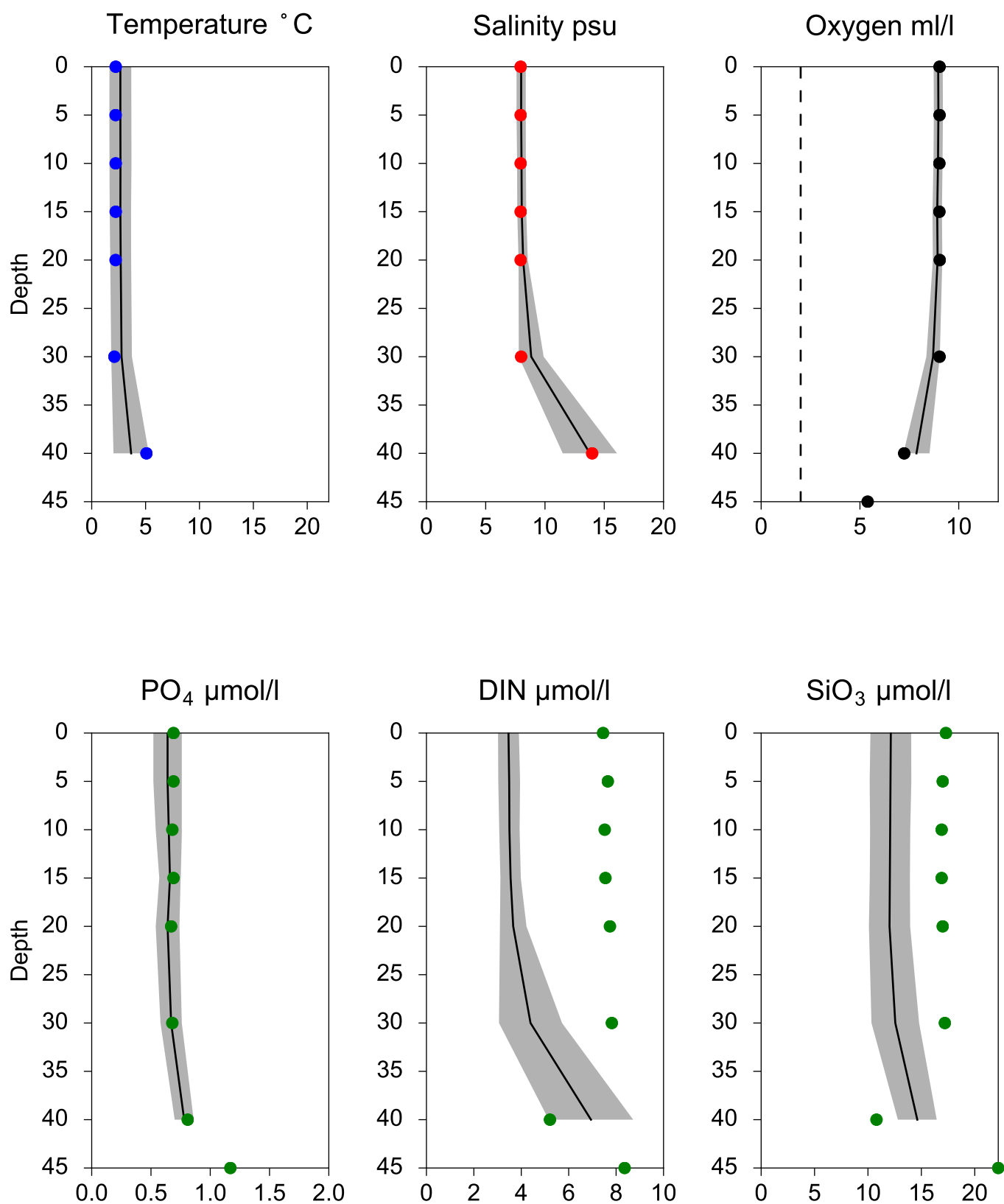


O₂ ml/l



Vertical profiles BY2 ARKONA February

— Mean 2001-2015 ■ St.Dev. ● 2017-02-12



STATION BY1 SURFACE WATER (0-10 m)

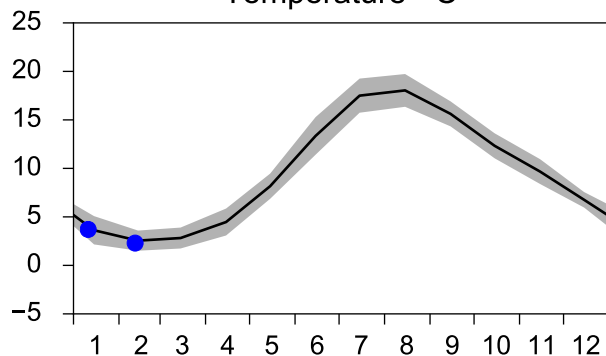
Annual Cycles

— Mean 2001-2015

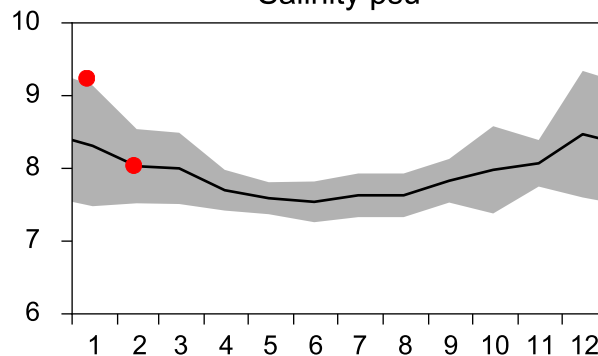
■ St.Dev.

● 2017

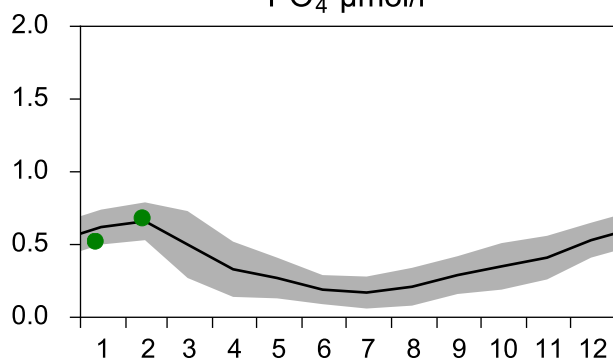
Temperature °C



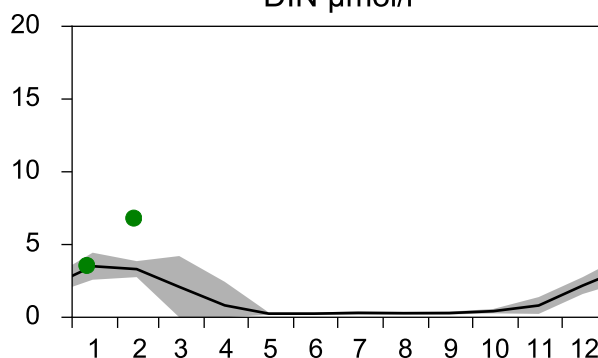
Salinity psu



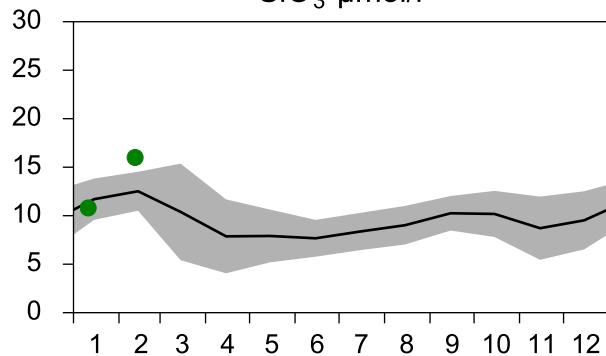
PO₄ μmol/l



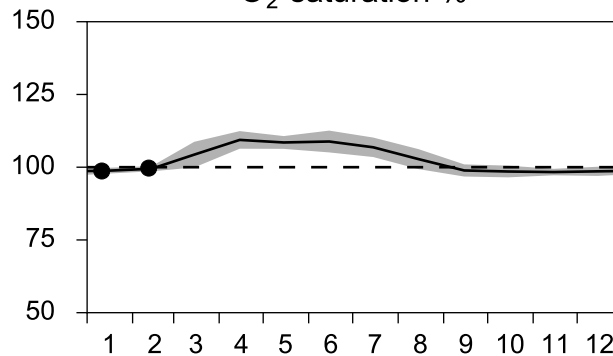
DIN μmol/l



SiO₃ μmol/l

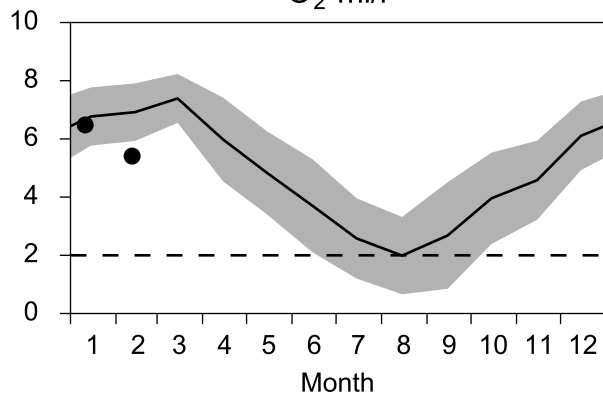


O₂ saturation %

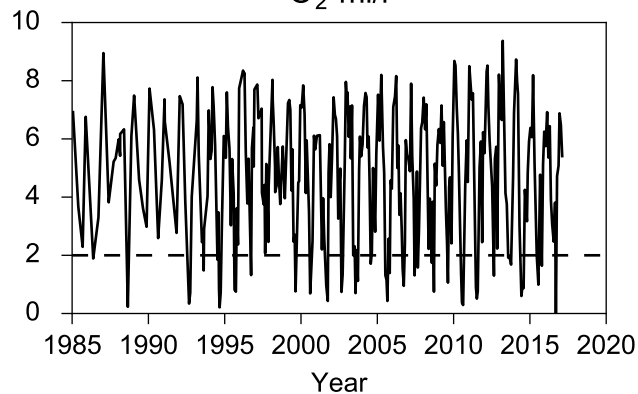


OXYGEN IN BOTTOM WATER (depth >= 40 m)

O₂ ml/l

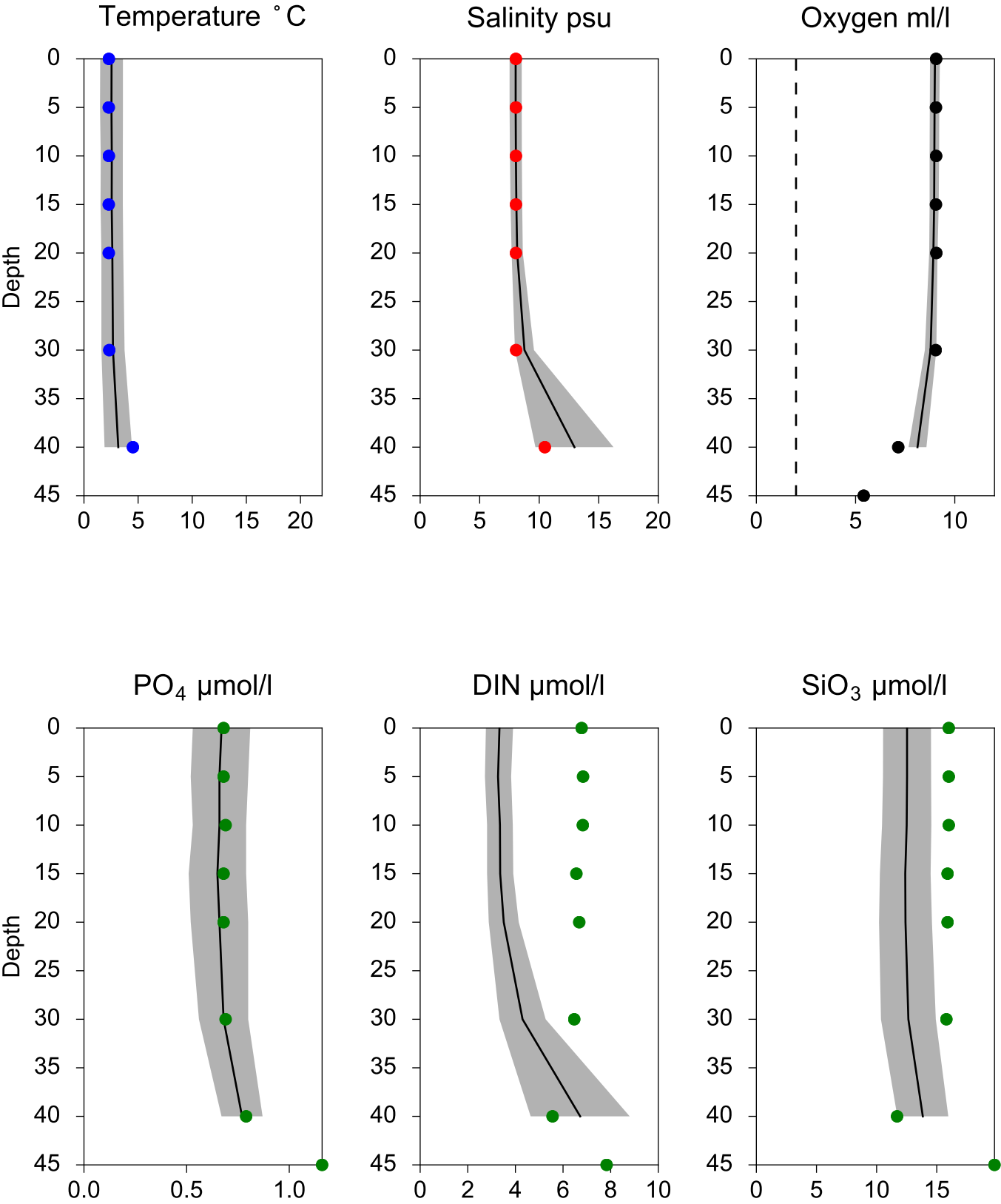


O₂ ml/l



Vertical profiles BY1
February

— Mean 2001-2015 St.Dev. • 2017-02-12



STATION W LANDSKRONA SURFACE WATER (0-10 m)

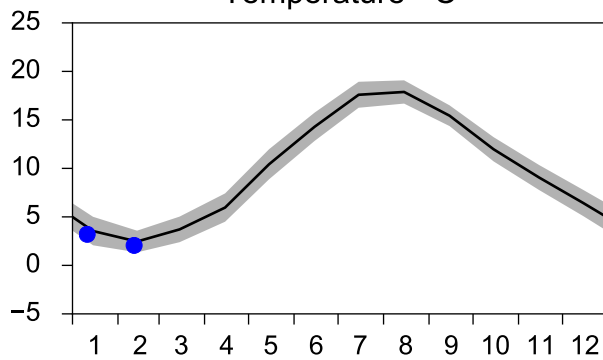
Annual Cycles

— Mean 2001-2015

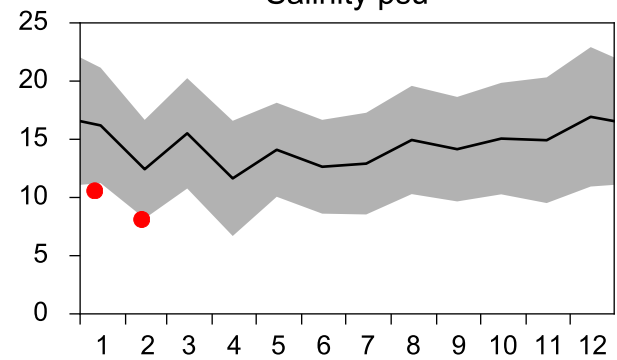
■ St.Dev.

● 2017

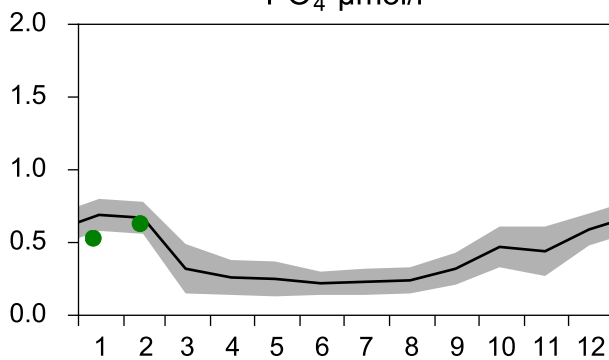
Temperature °C



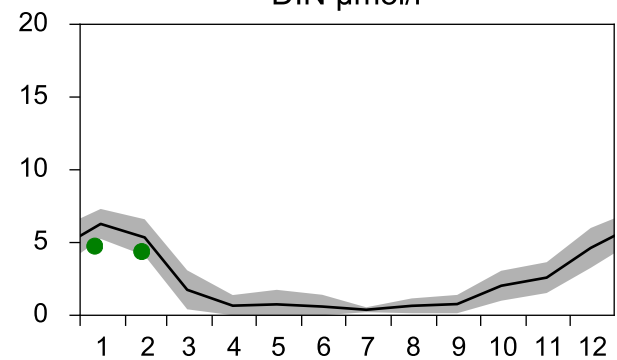
Salinity psu



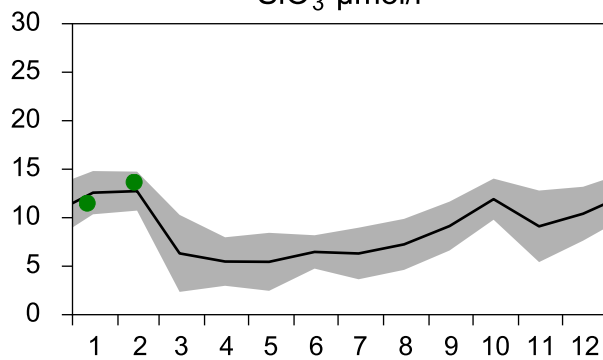
PO₄ µmol/l



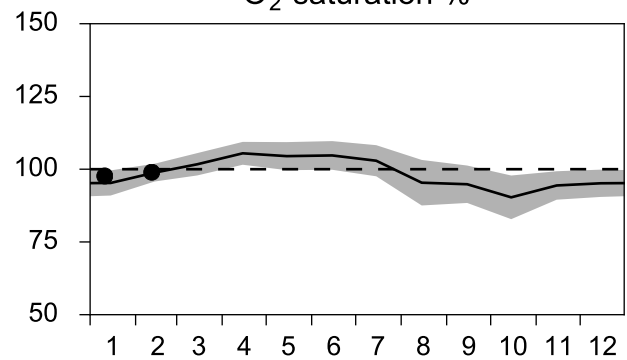
DIN µmol/l



SiO₃ µmol/l

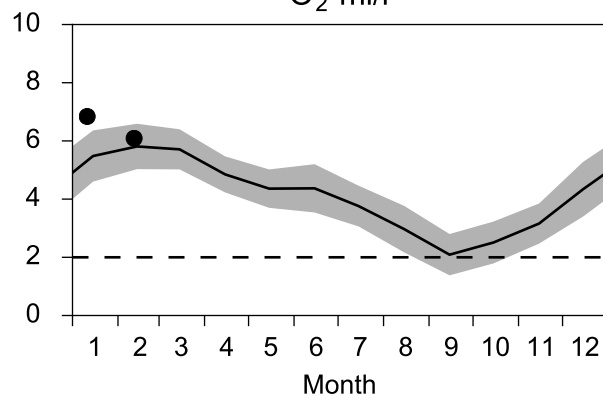


O₂ saturation %

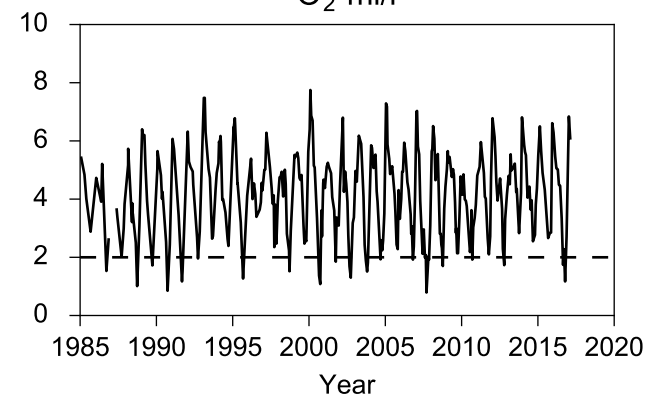


OXYGEN IN BOTTOM WATER (depth >= 40 m)

O₂ ml/l

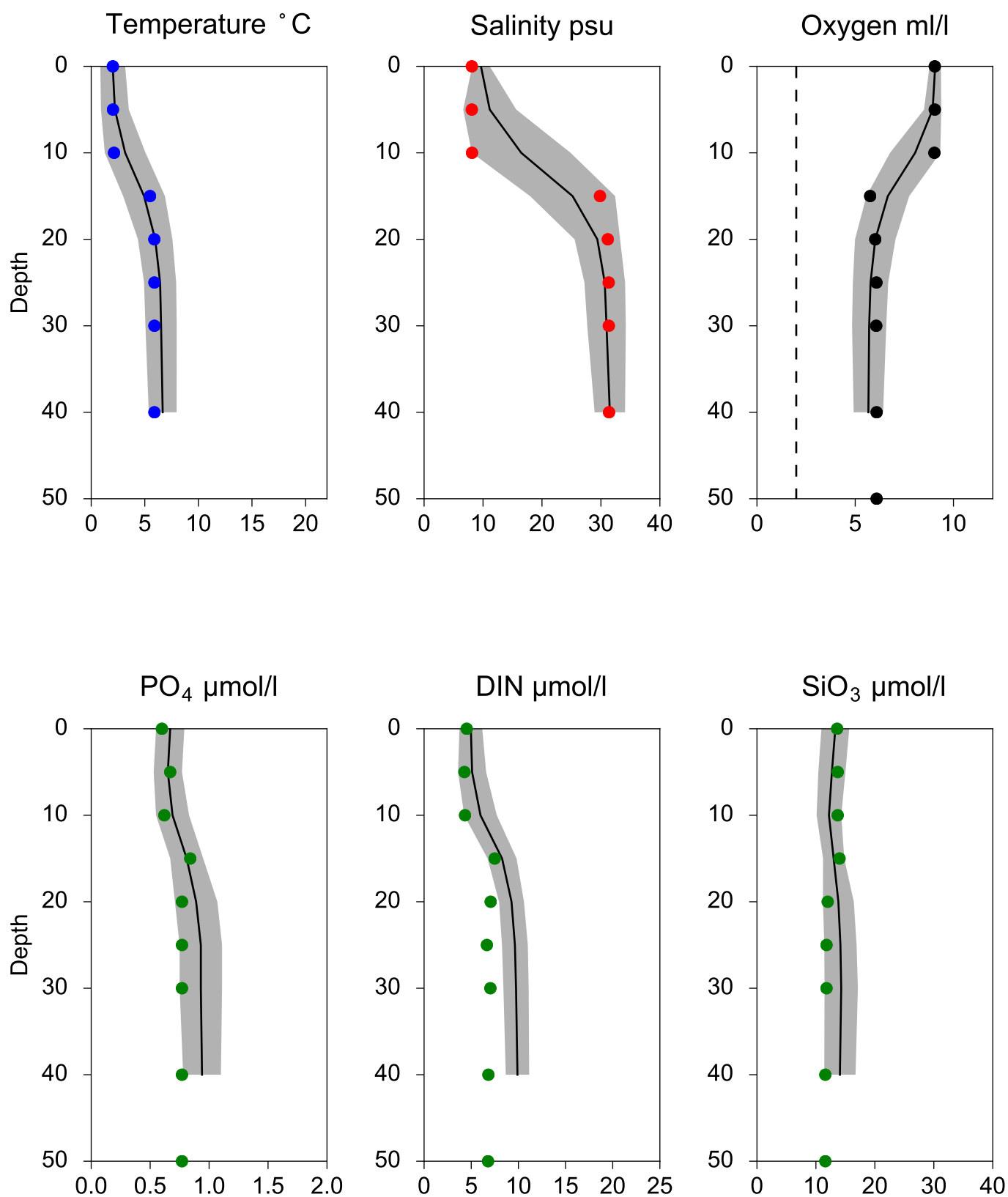


O₂ ml/l



Vertical profiles W LANDSKRONA February

— Mean 2001-2015 St.Dev. • 2017-02-12



STATION ANHOLT E SURFACE WATER (0-10 m)

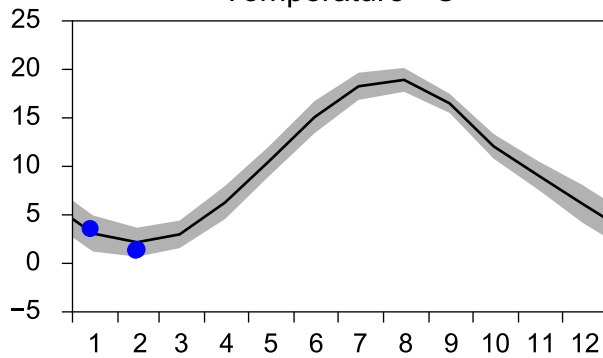
Annual Cycles

— Mean 2001-2015

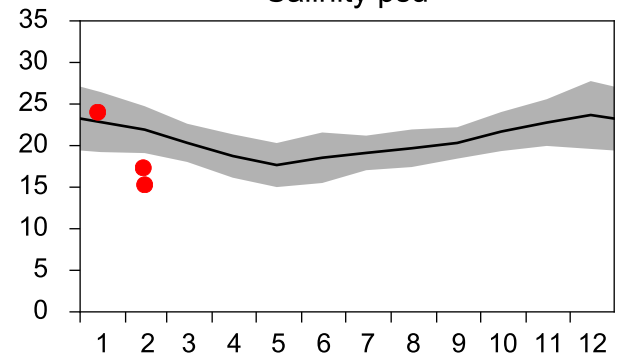
■ St.Dev.

● 2017

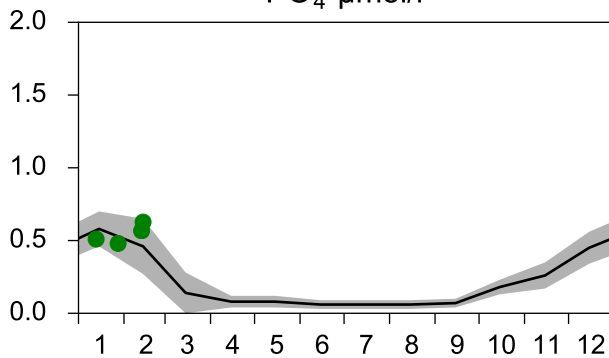
Temperature °C



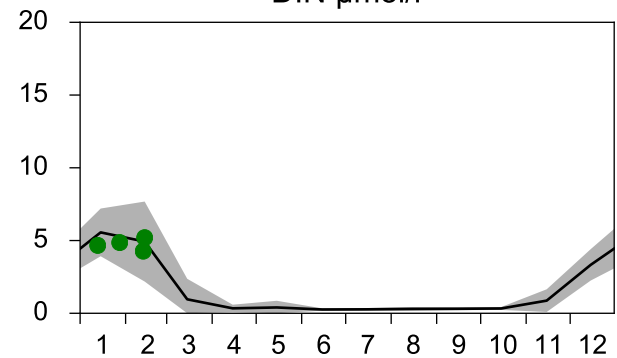
Salinity psu



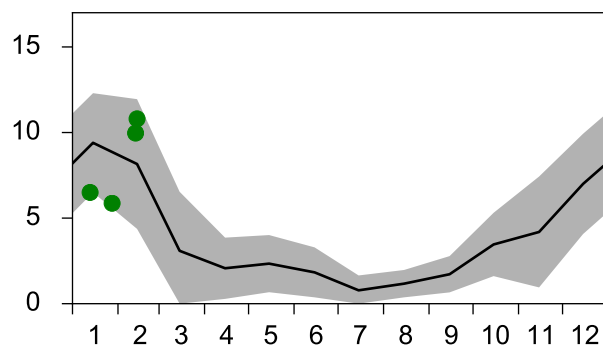
PO₄ µmol/l



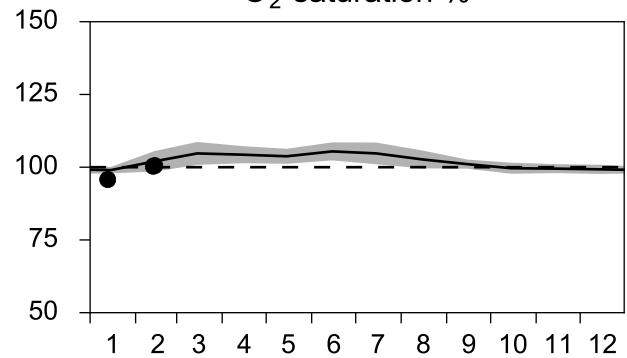
DIN µmol/l



SiO₃ µmol/l

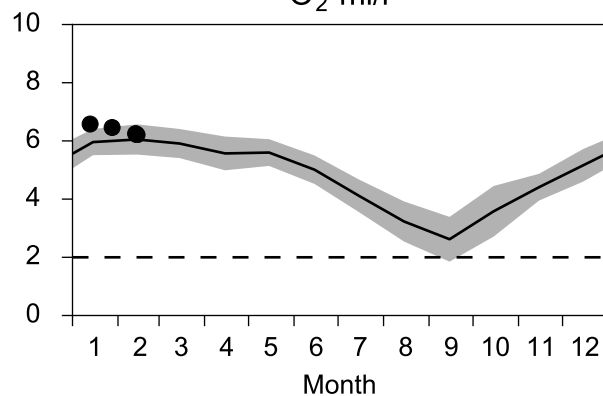


O₂ saturation %

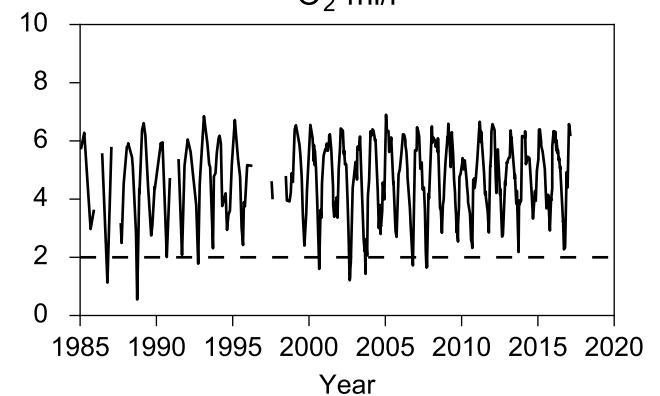


OXYGEN IN BOTTOM WATER (depth >= 52 m)

O₂ ml/l

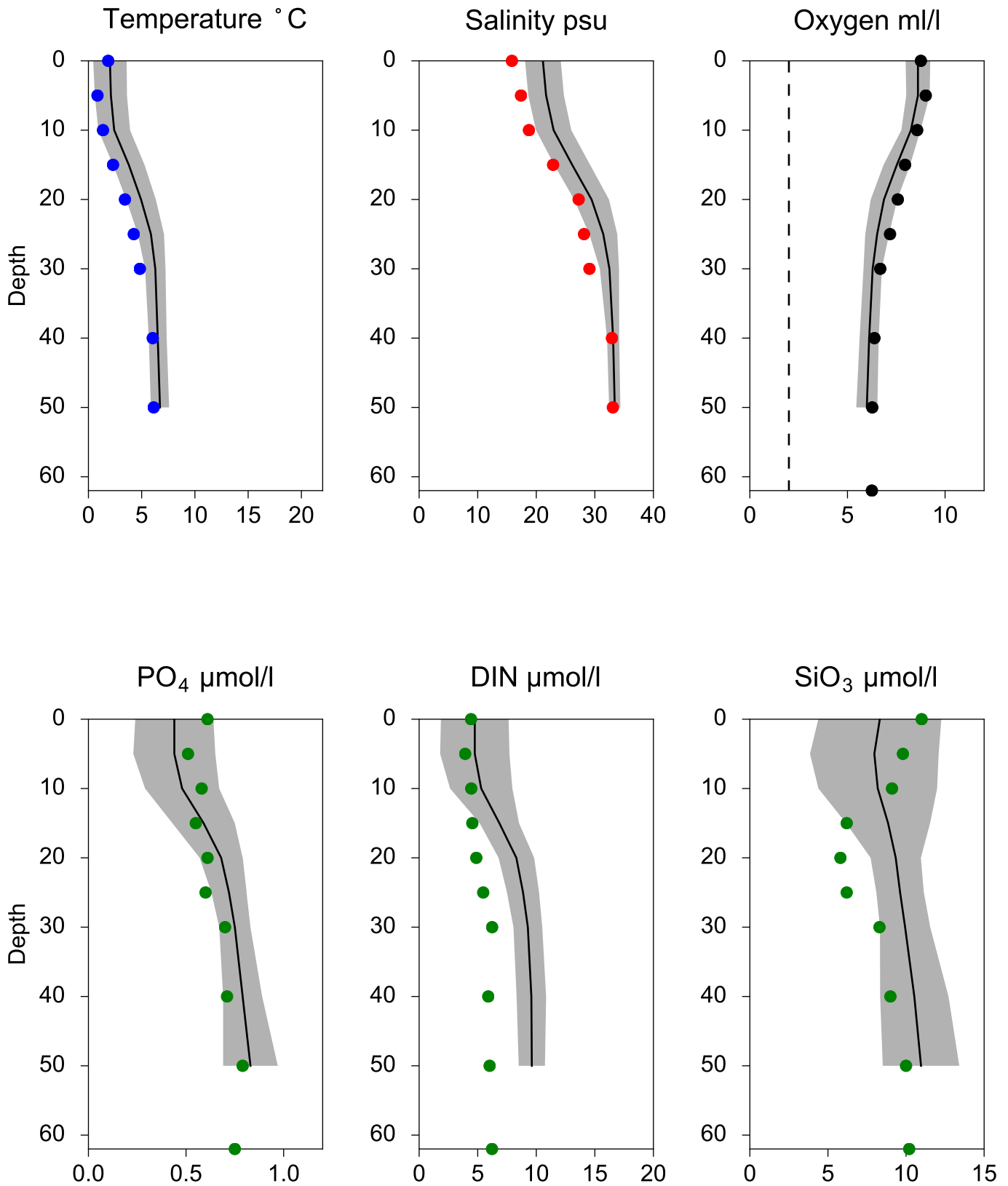


O₂ ml/l



Vertical profiles ANHOLT E February

— Mean 2001-2015 St.Dev. • 2017-02-13



STATION FLADEN SURFACE WATER (0-10 m)

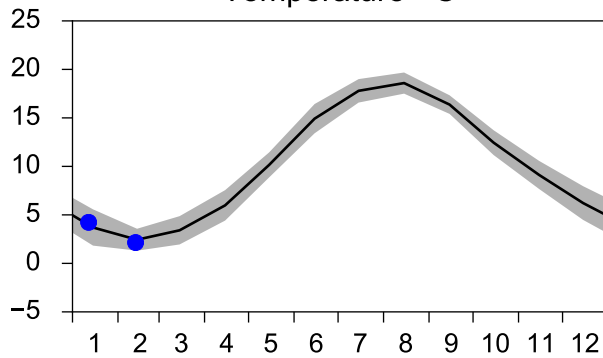
Annual Cycles

— Mean 2001-2015

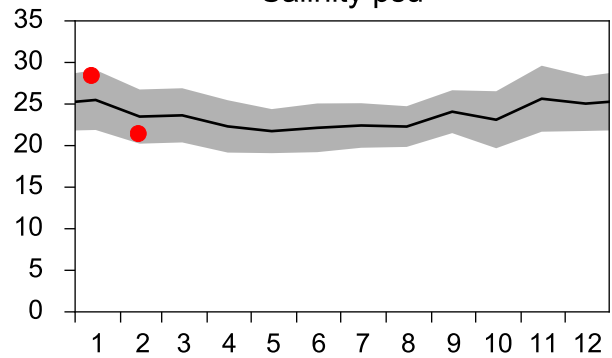
■ St.Dev.

● 2017

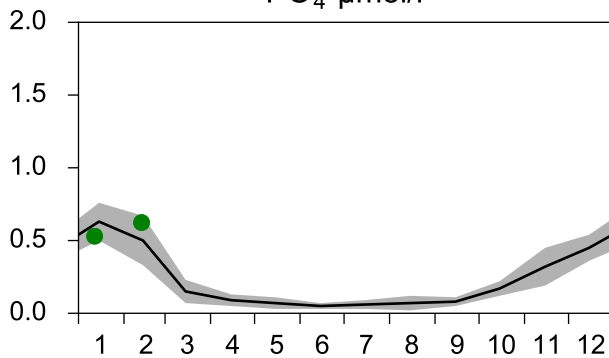
Temperature °C



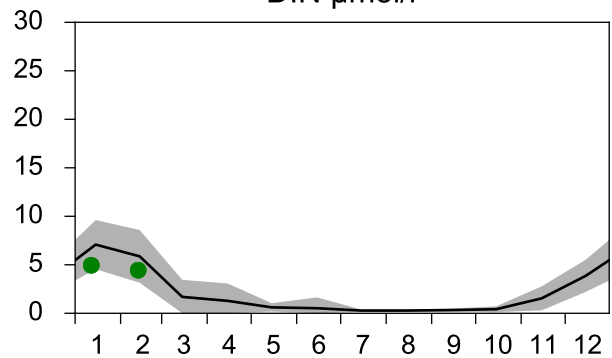
Salinity psu



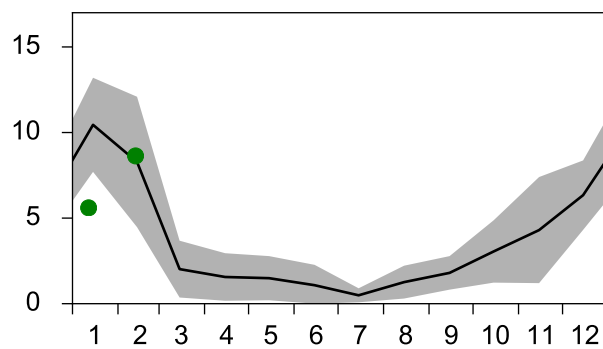
PO₄ µmol/l



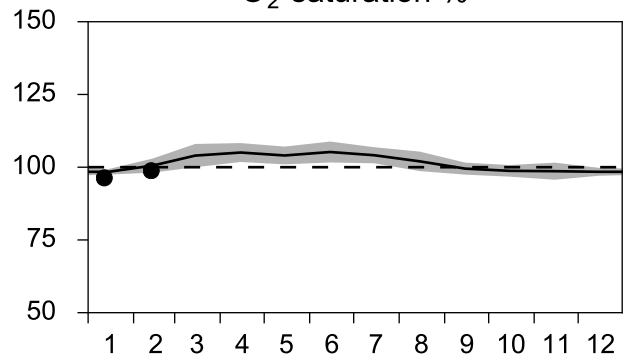
DIN µmol/l



SiO₃ µmol/l

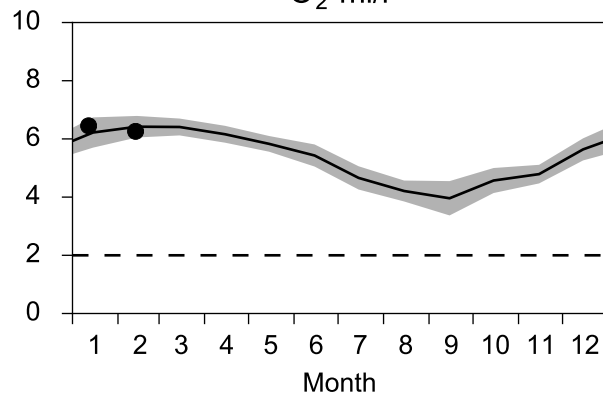


O₂ saturation %

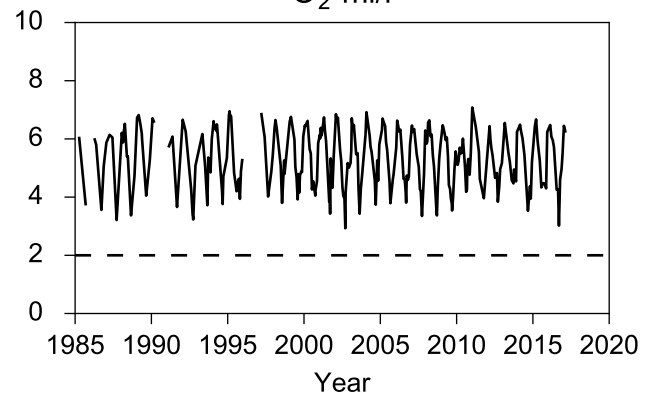


OXYGEN IN BOTTOM WATER (depth >= 74 m)

O₂ ml/l

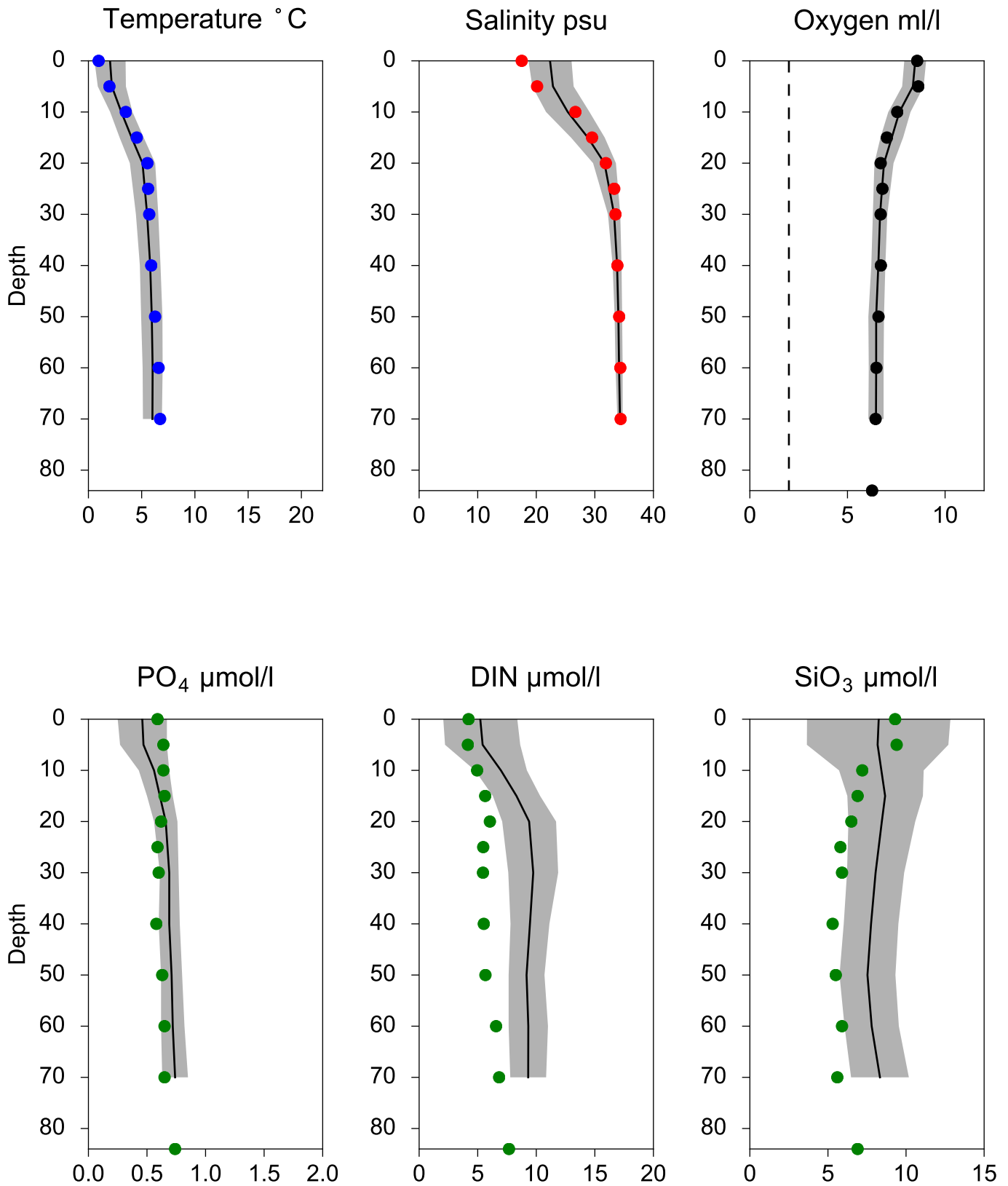


O₂ ml/l



Vertical profiles FLADEN February

— Mean 2001-2015 St.Dev. • 2017-02-13



STATION Å17 SURFACE WATER (0-10 m)

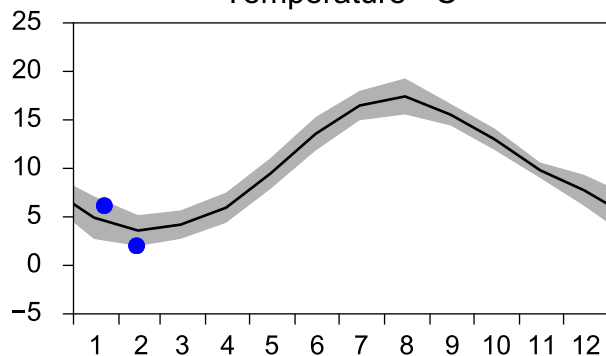
Annual Cycles

— Mean 2001-2015

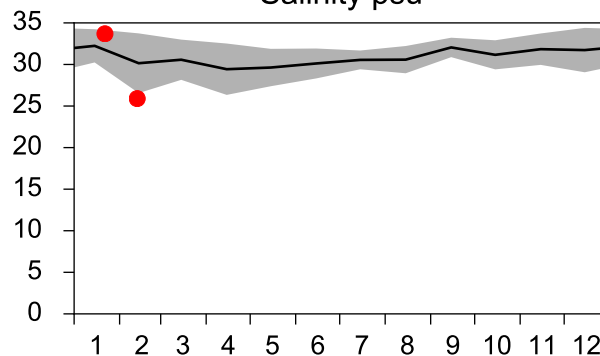
■ St.Dev.

● 2017

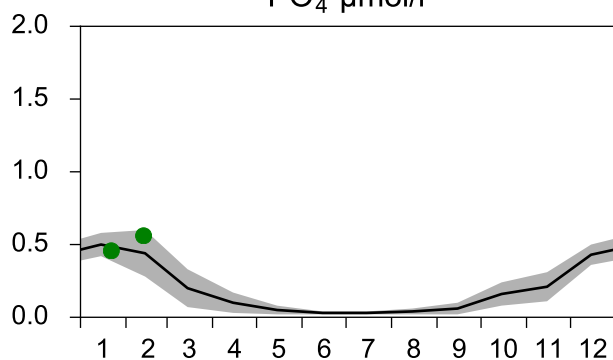
Temperature °C



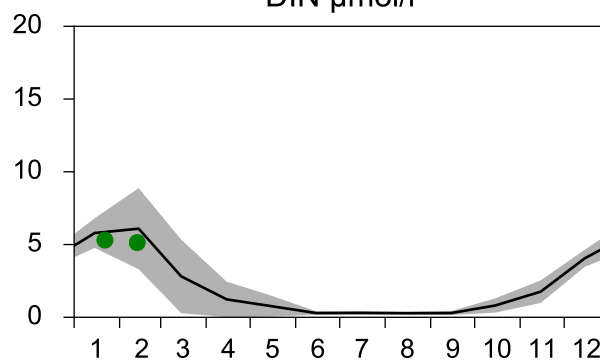
Salinity psu



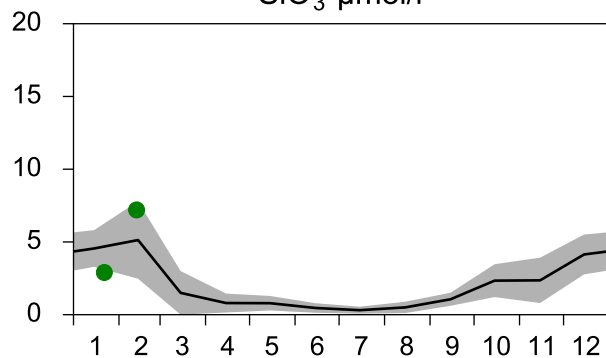
PO₄ µmol/l



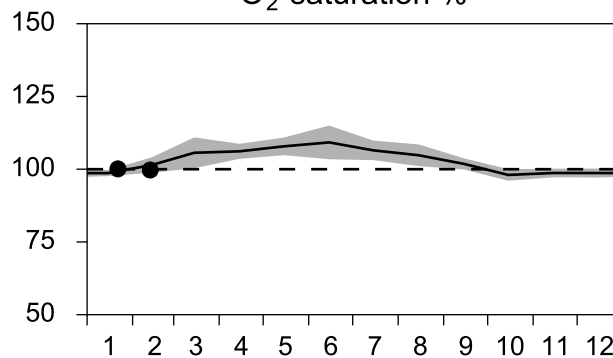
DIN µmol/l



SiO₃ µmol/l

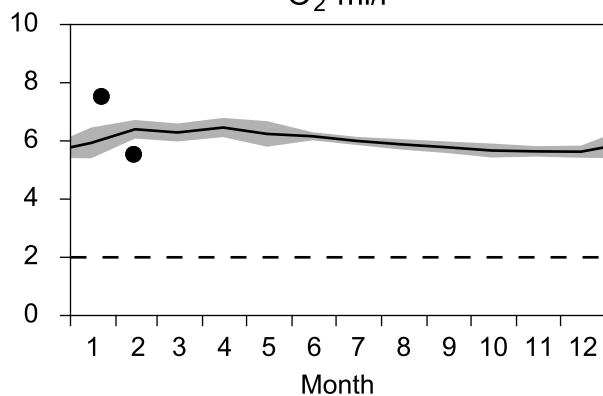


O₂ saturation %

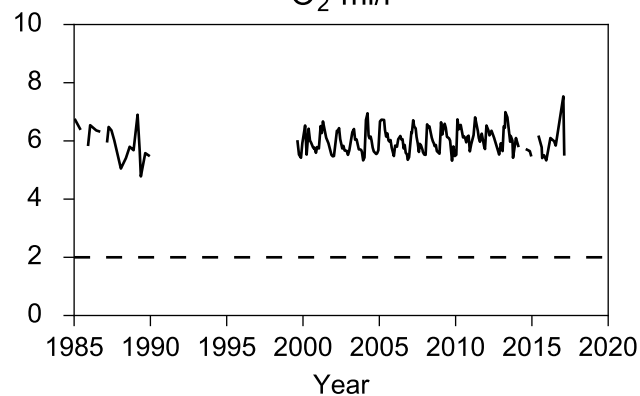


OXYGEN IN BOTTOM WATER (depth >= 300 m)

O₂ ml/l

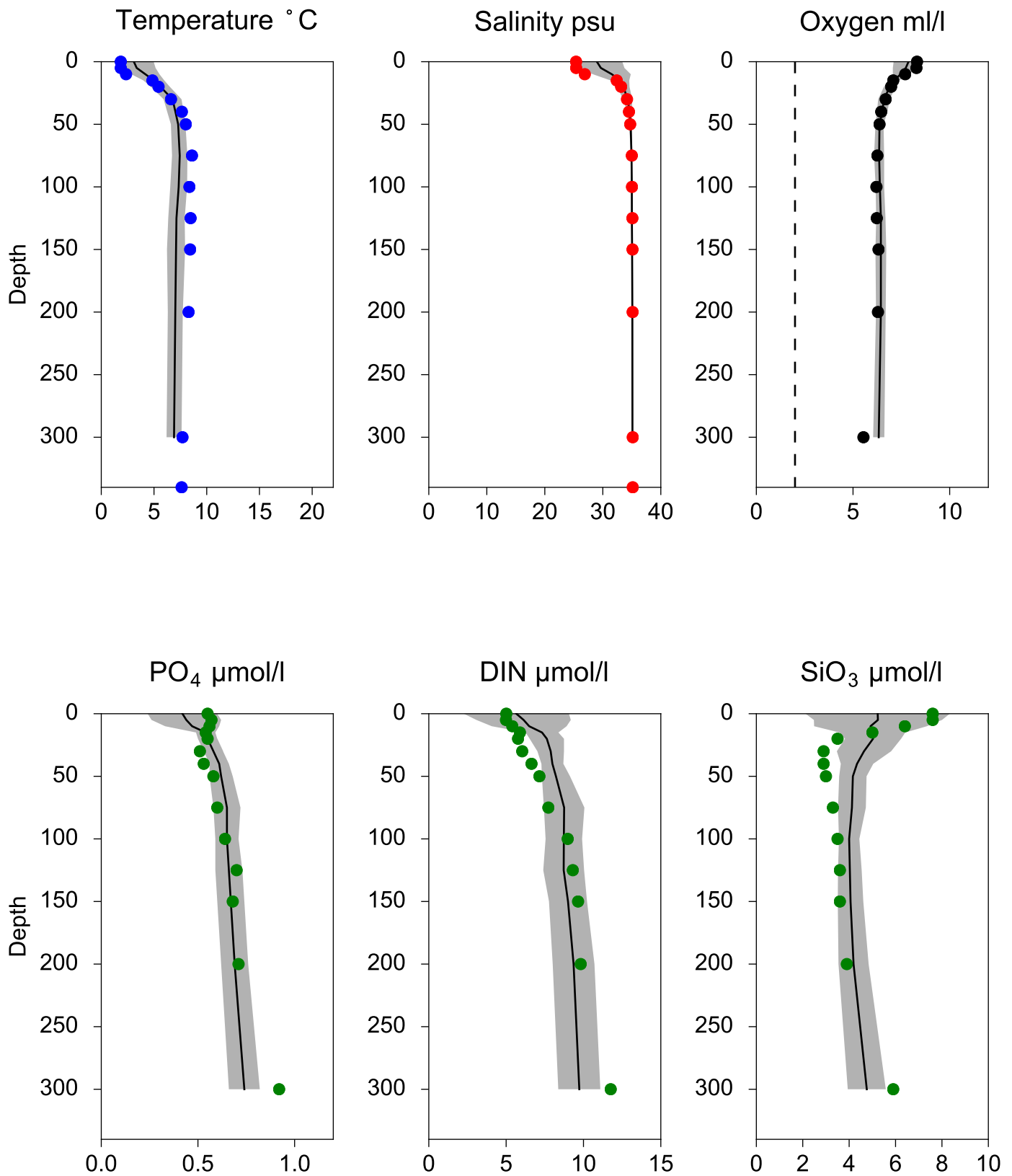


O₂ ml/l



Vertical profiles Å17 February

— Mean 2001-2015 ■ St.Dev. ● 2017-02-13



STATION Å15 SURFACE WATER (0-10 m)

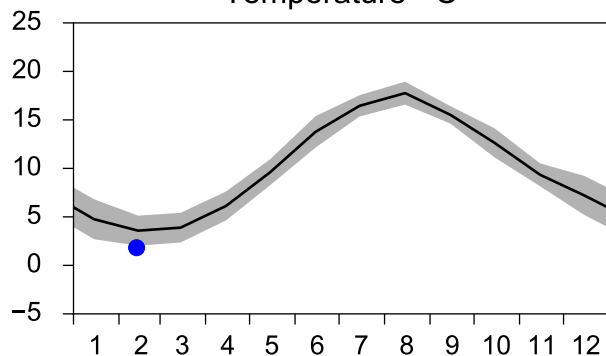
Annual Cycles

— Mean 2001-2015

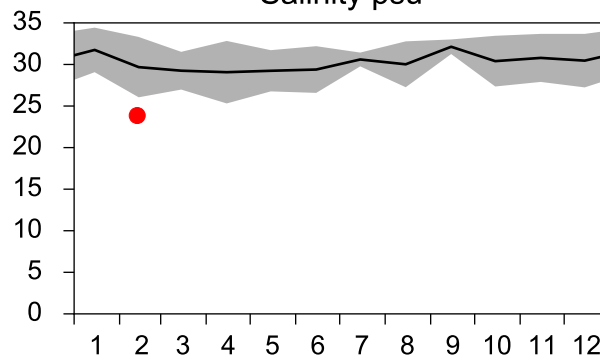
■ St.Dev.

● 2017

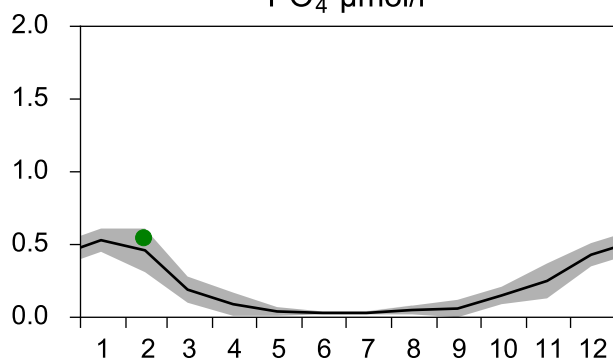
Temperature °C



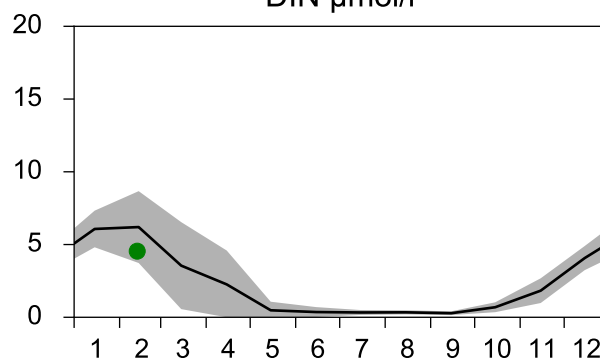
Salinity psu



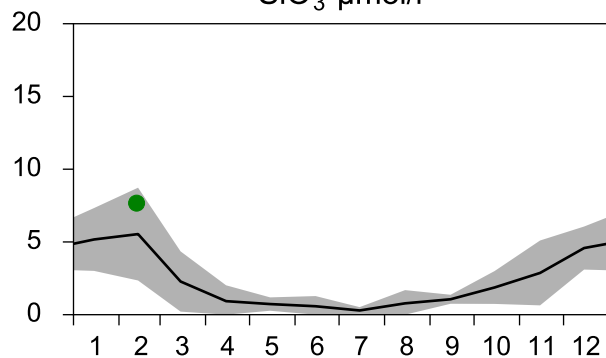
PO₄ µmol/l



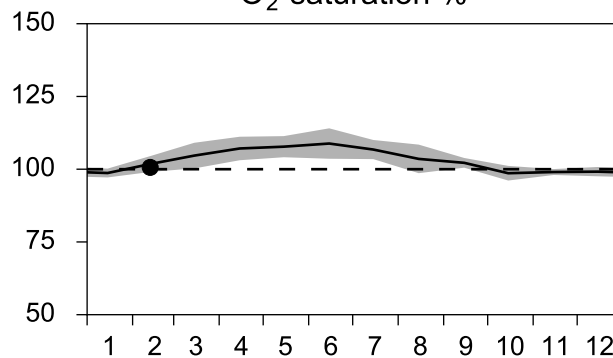
DIN µmol/l



SiO₃ µmol/l

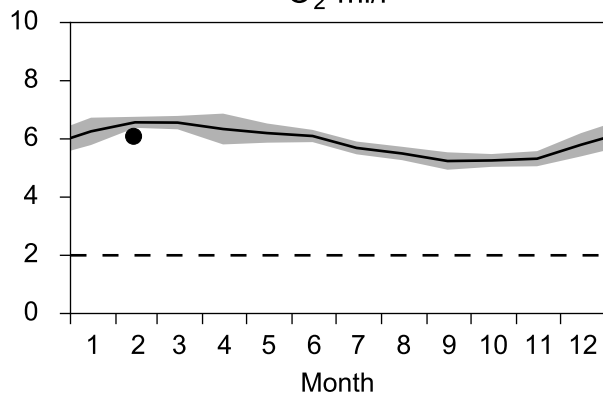


O₂ saturation %

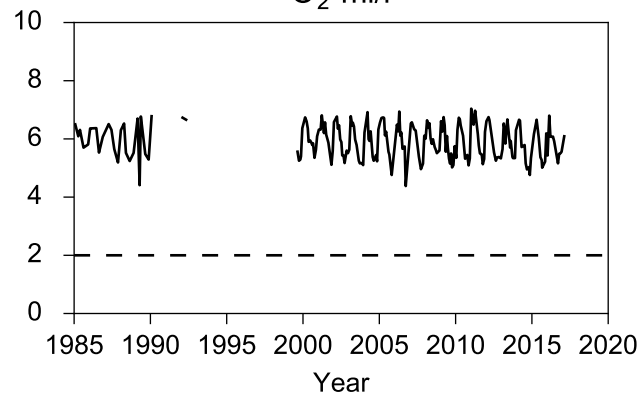


OXYGEN IN BOTTOM WATER (depth >= 125 m)

O₂ ml/l



O₂ ml/l

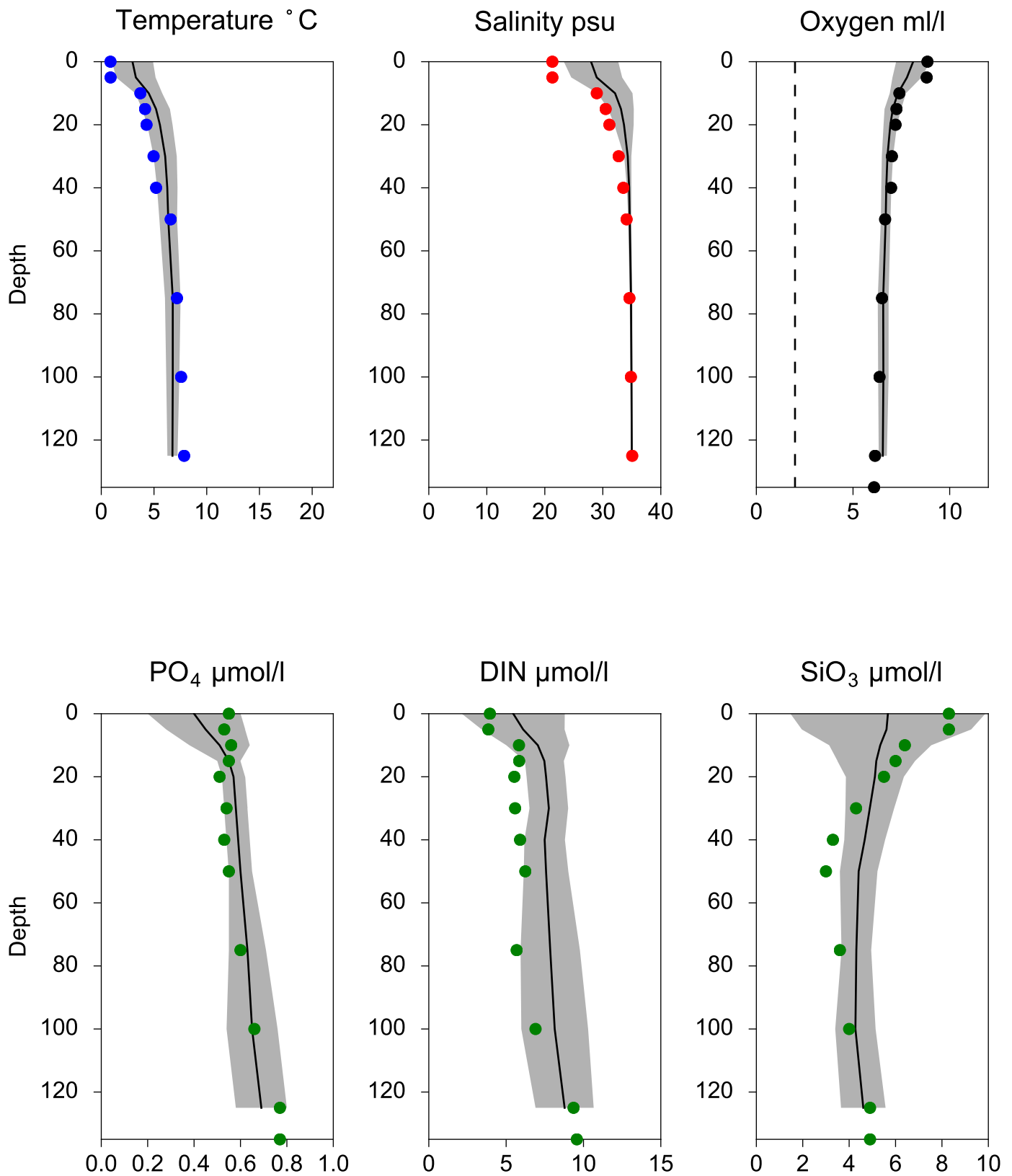


Vertical profiles Å15 February

— Mean 2001-2015

■ St.Dev.

● 2017-02-13



STATION Å13 SURFACE WATER (0-10 m)

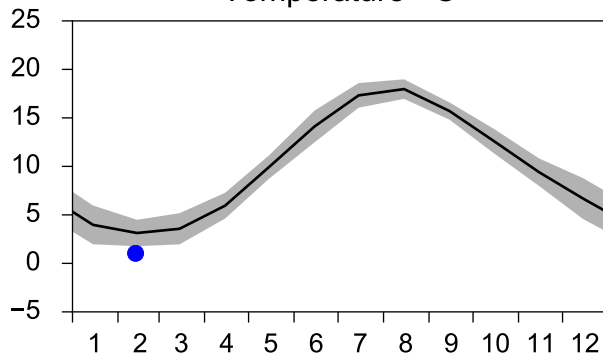
Annual Cycles

— Mean 2001-2015

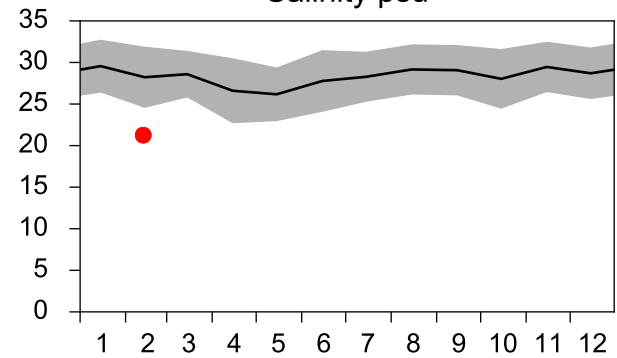
■ St.Dev.

● 2017

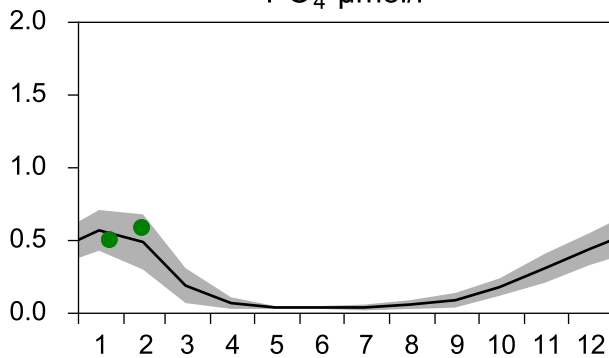
Temperature °C



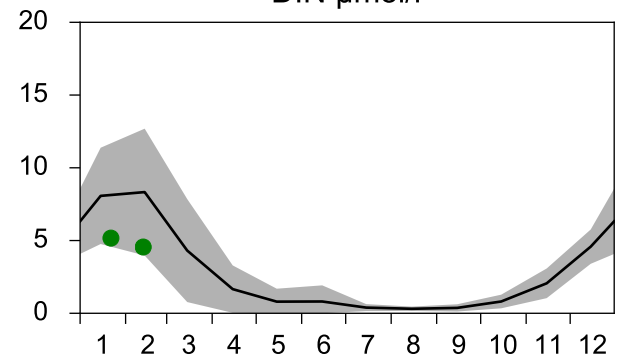
Salinity psu



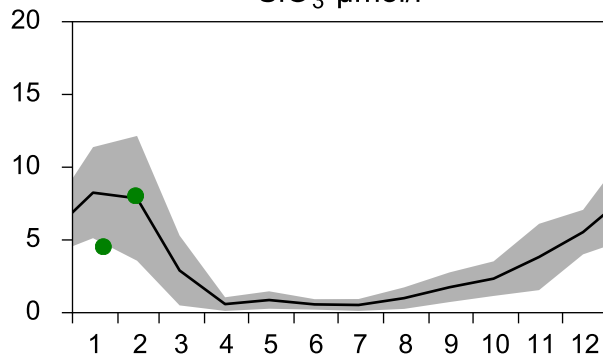
PO₄ µmol/l



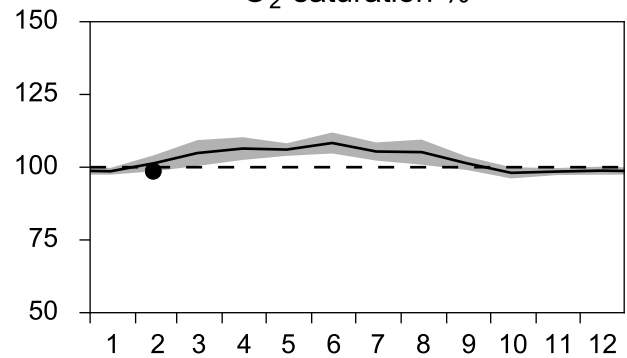
DIN µmol/l



SiO₃ µmol/l

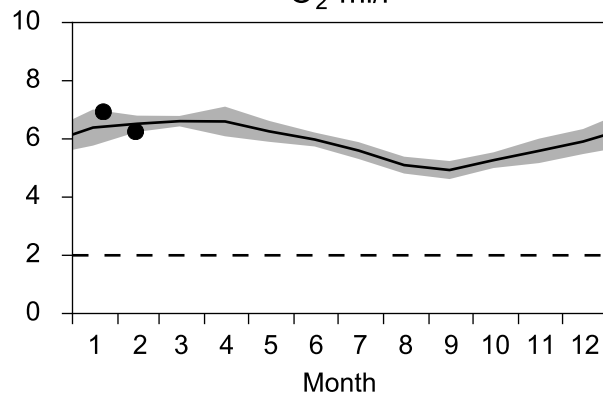


O₂ saturation %

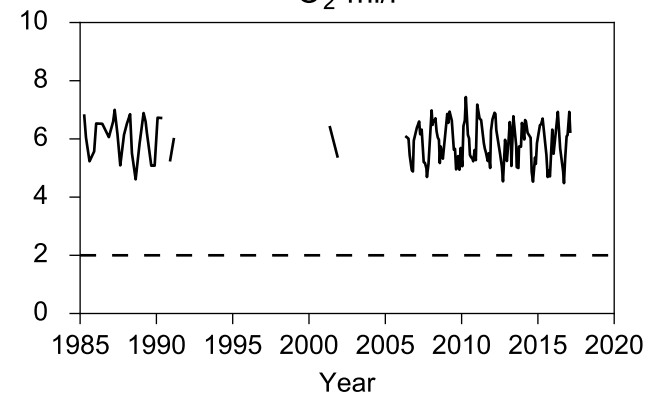


OXYGEN IN BOTTOM WATER (depth >= 80 m)

O₂ ml/l

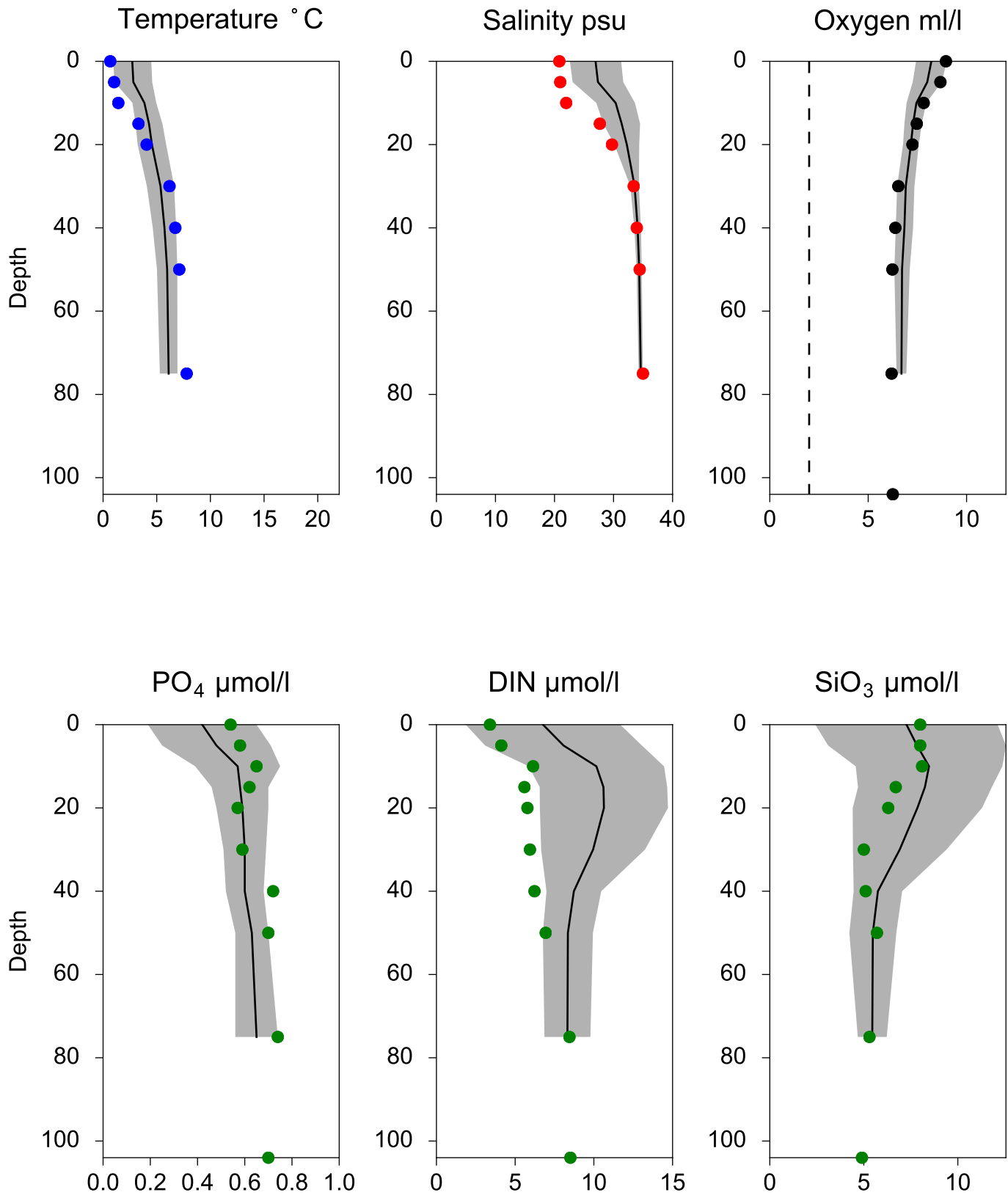


O₂ ml/l



Vertical profiles Å13 February

— Mean 2001-2015 St.Dev. • 2017-02-13



STATION SLÄGGÖ SURFACE WATER (0-10 m)

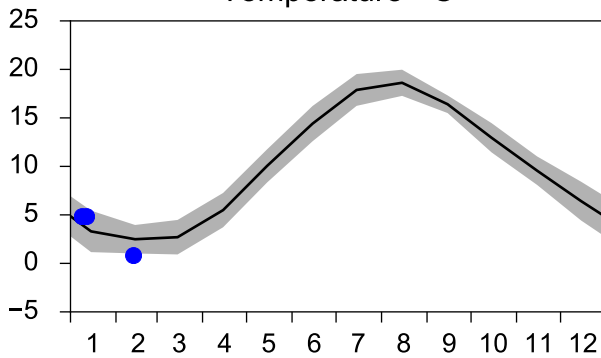
Annual Cycles

— Mean 2001-2015

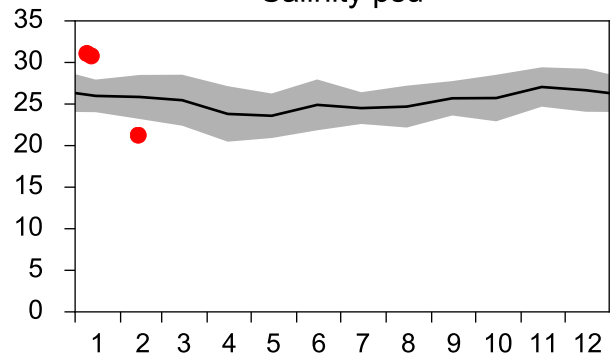
■ St.Dev.

● 2017

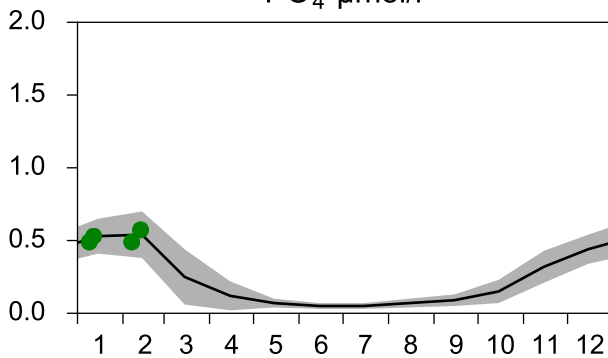
Temperature °C



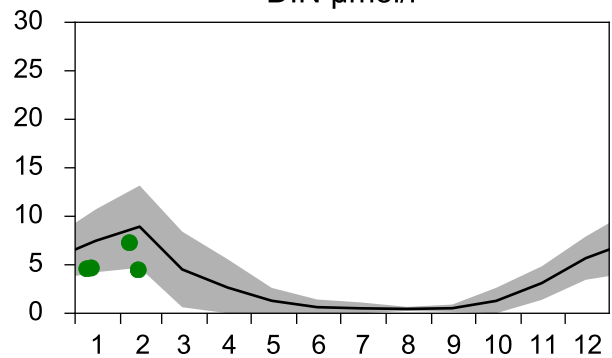
Salinity psu



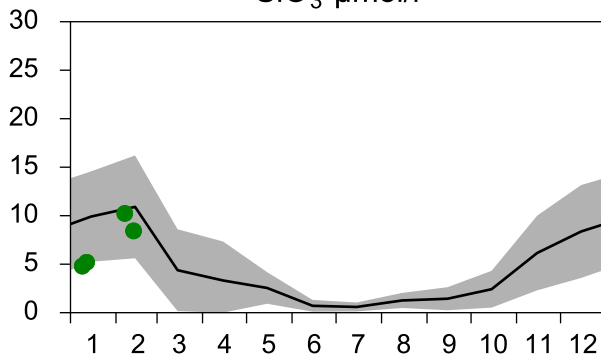
PO₄ µmol/l



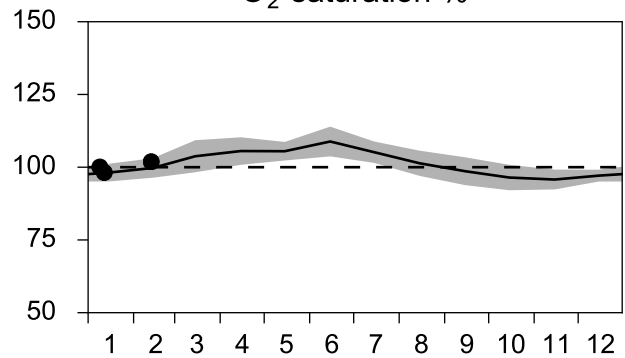
DIN µmol/l



SiO₃ µmol/l

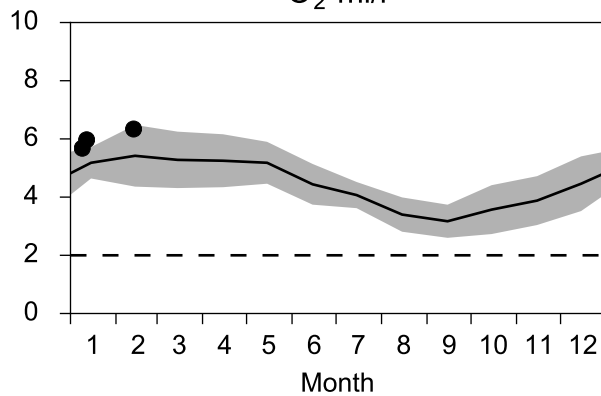


O₂ saturation %

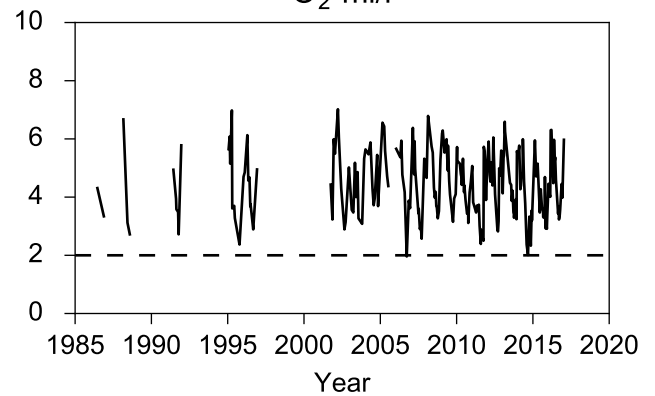


OXYGEN IN BOTTOM WATER (depth >= 64 m)

O₂ ml/l



O₂ ml/l

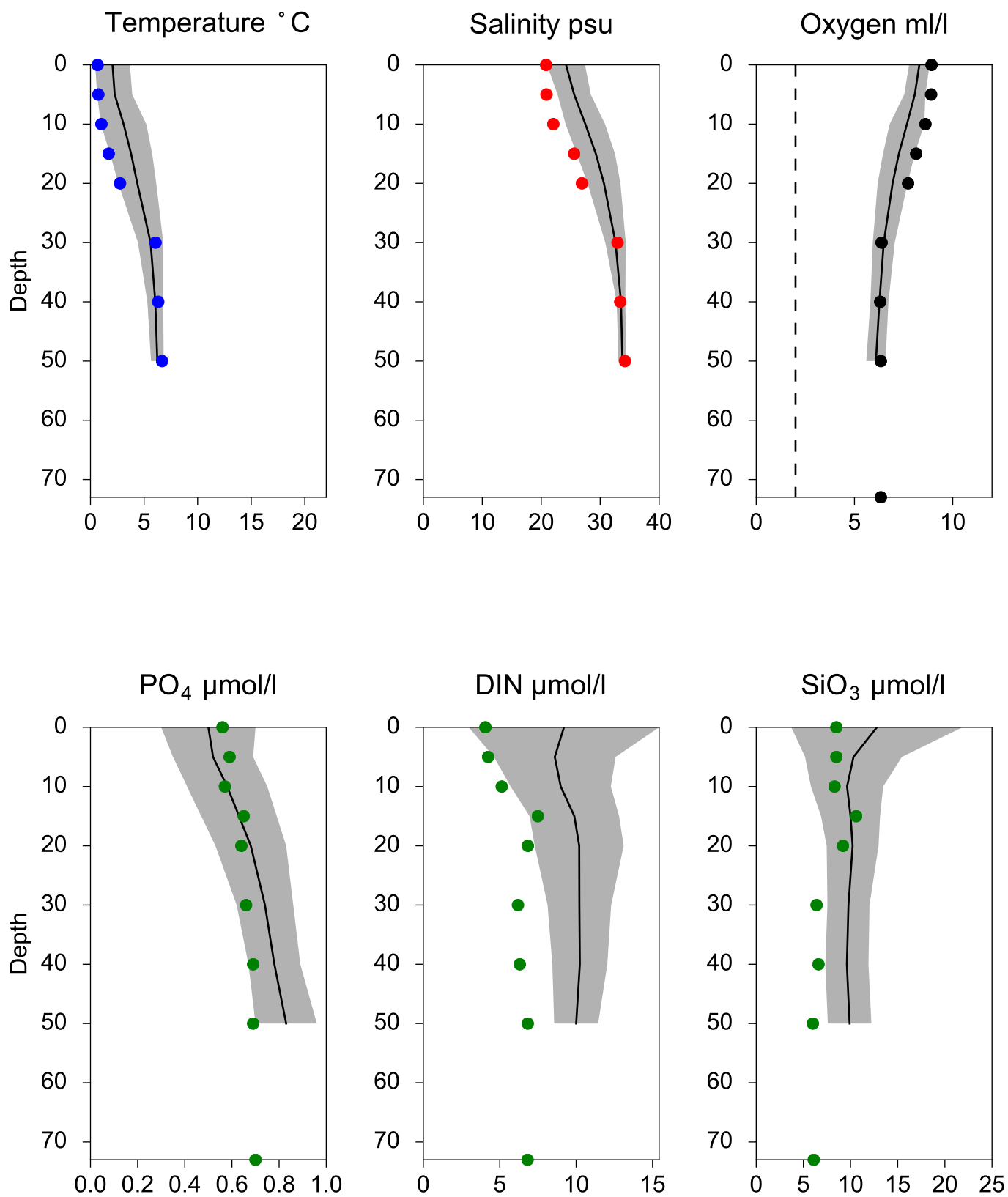


Vertical profiles SLÄGGÖ February

— Mean 2001-2015

■ St.Dev.

● 2017-02-13



STATION P2 SURFACE WATER (0-10 m)

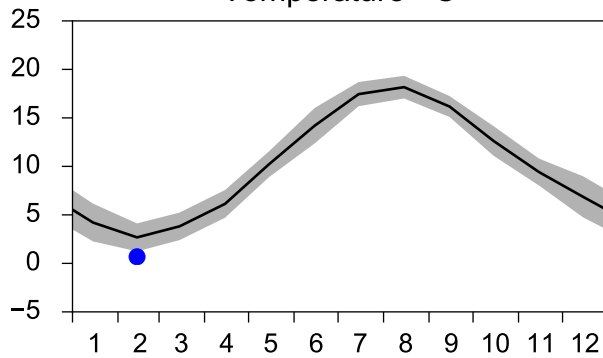
Annual Cycles

— Mean 2001-2015

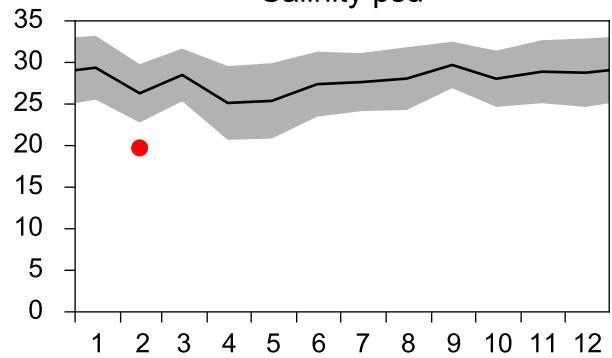
■ St.Dev.

● 2017

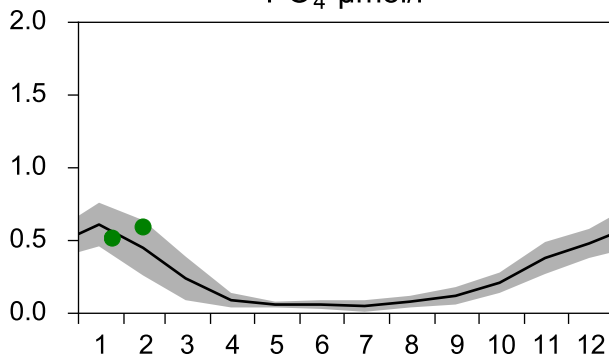
Temperature °C



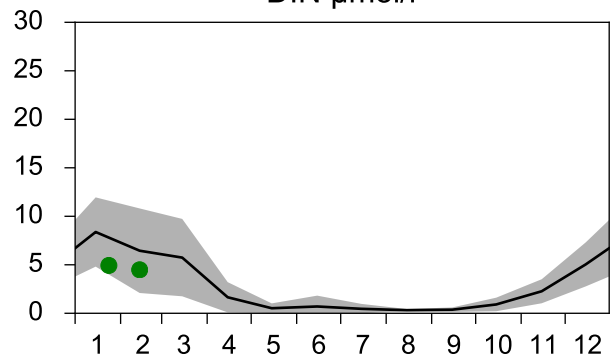
Salinity psu



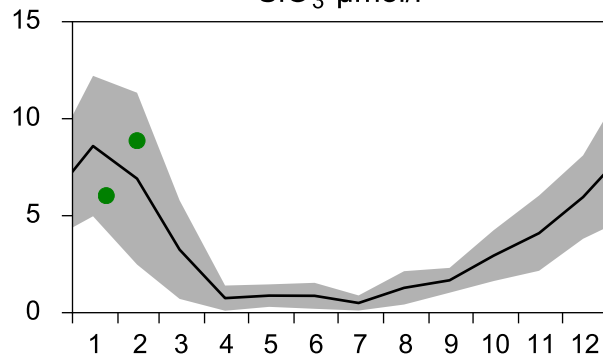
PO₄ μmol/l



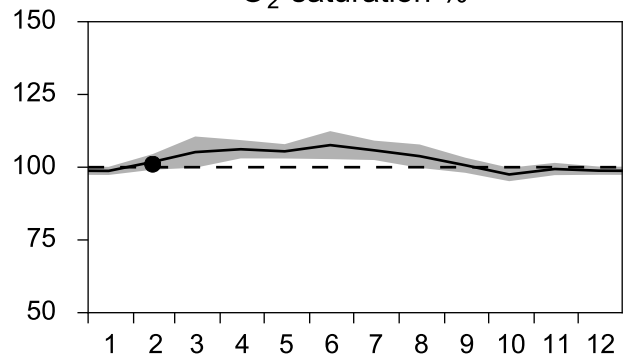
DIN μmol/l



SiO₃ μmol/l

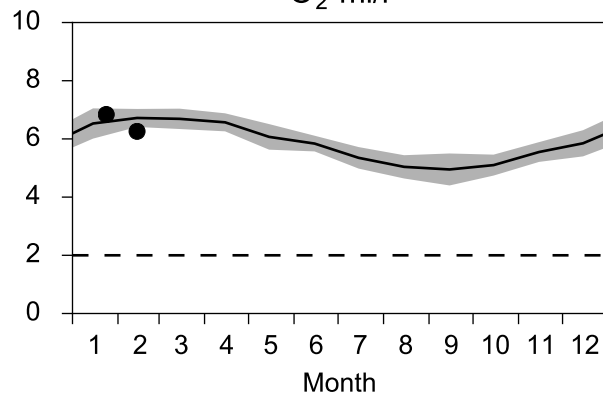


O₂ saturation %

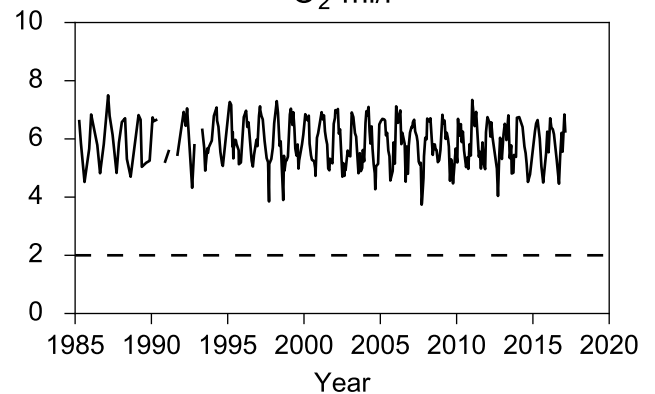


OXYGEN IN BOTTOM WATER (depth >= 75 m)

O₂ ml/l



O₂ ml/l

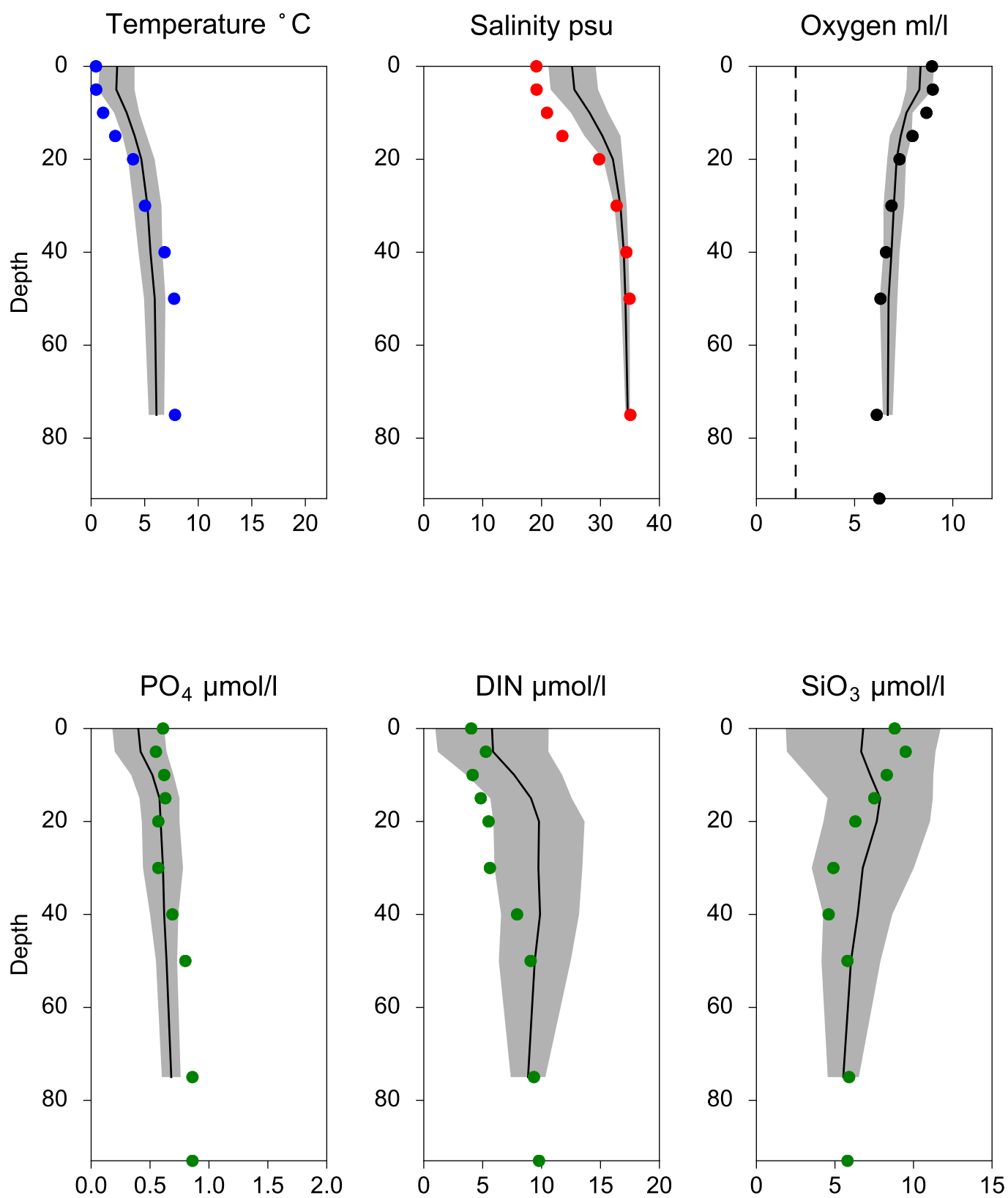


Vertical profiles P2 February

— Mean 2001-2015

■ St.Dev.

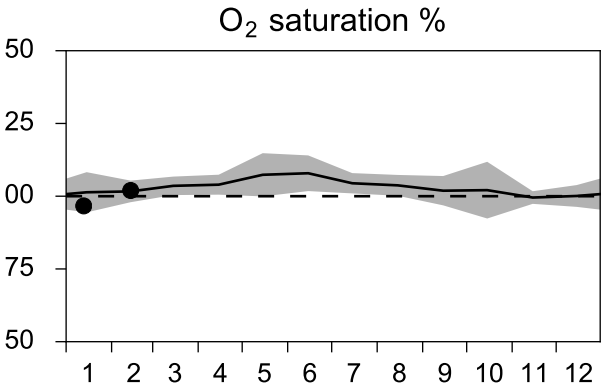
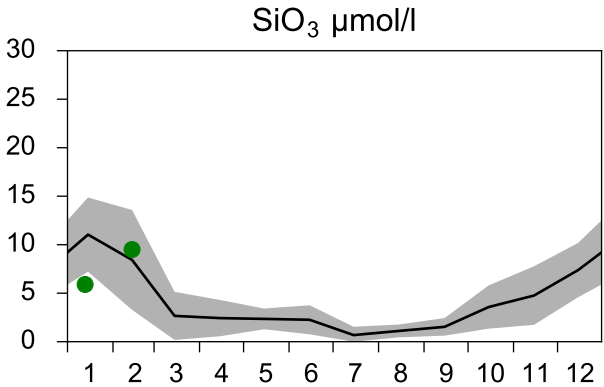
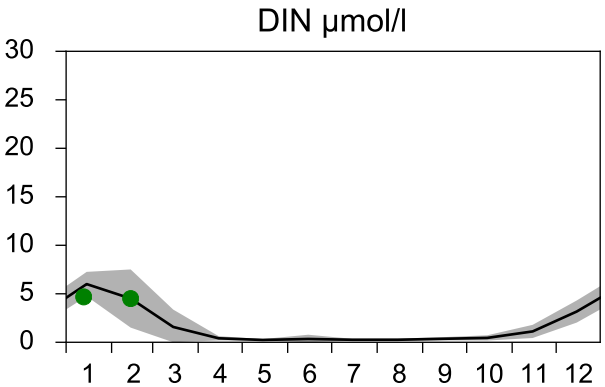
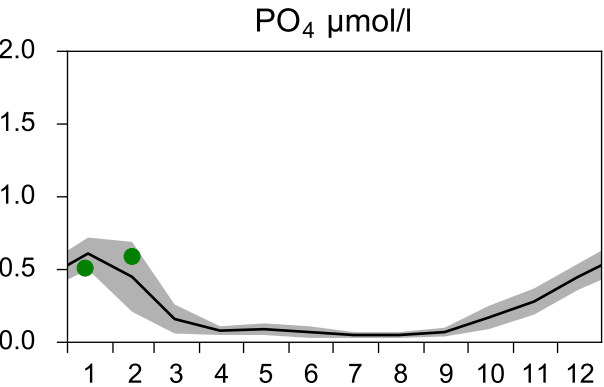
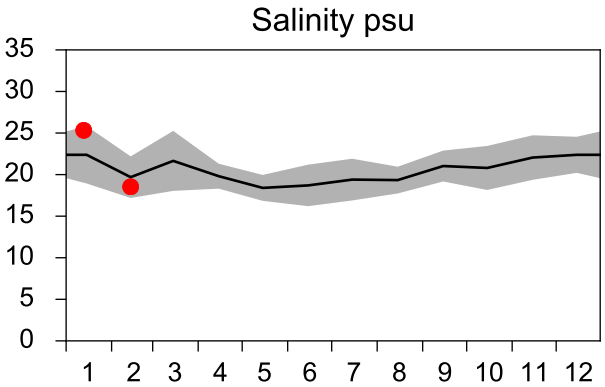
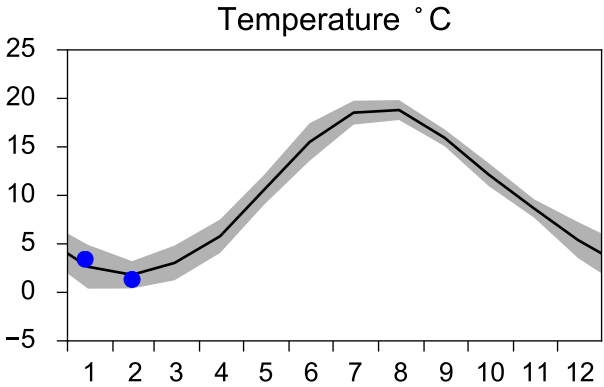
● 2017-02-14



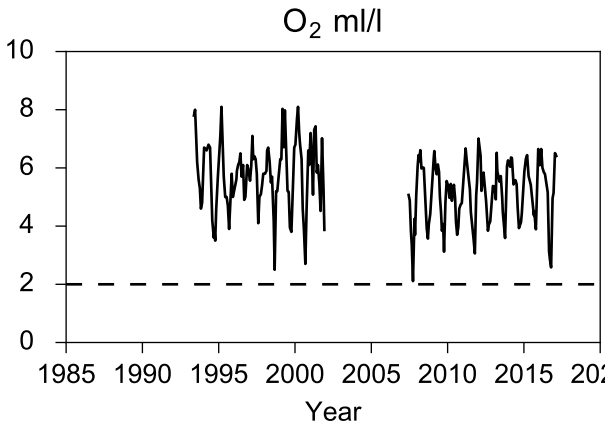
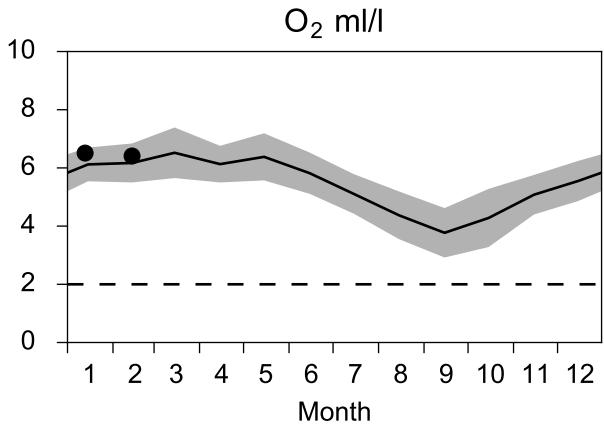
STATION N14 FALKENBERG SURFACE WATER (0-10 m)

Annual Cycles

— Mean 2001-2015 St.Dev. • 2017

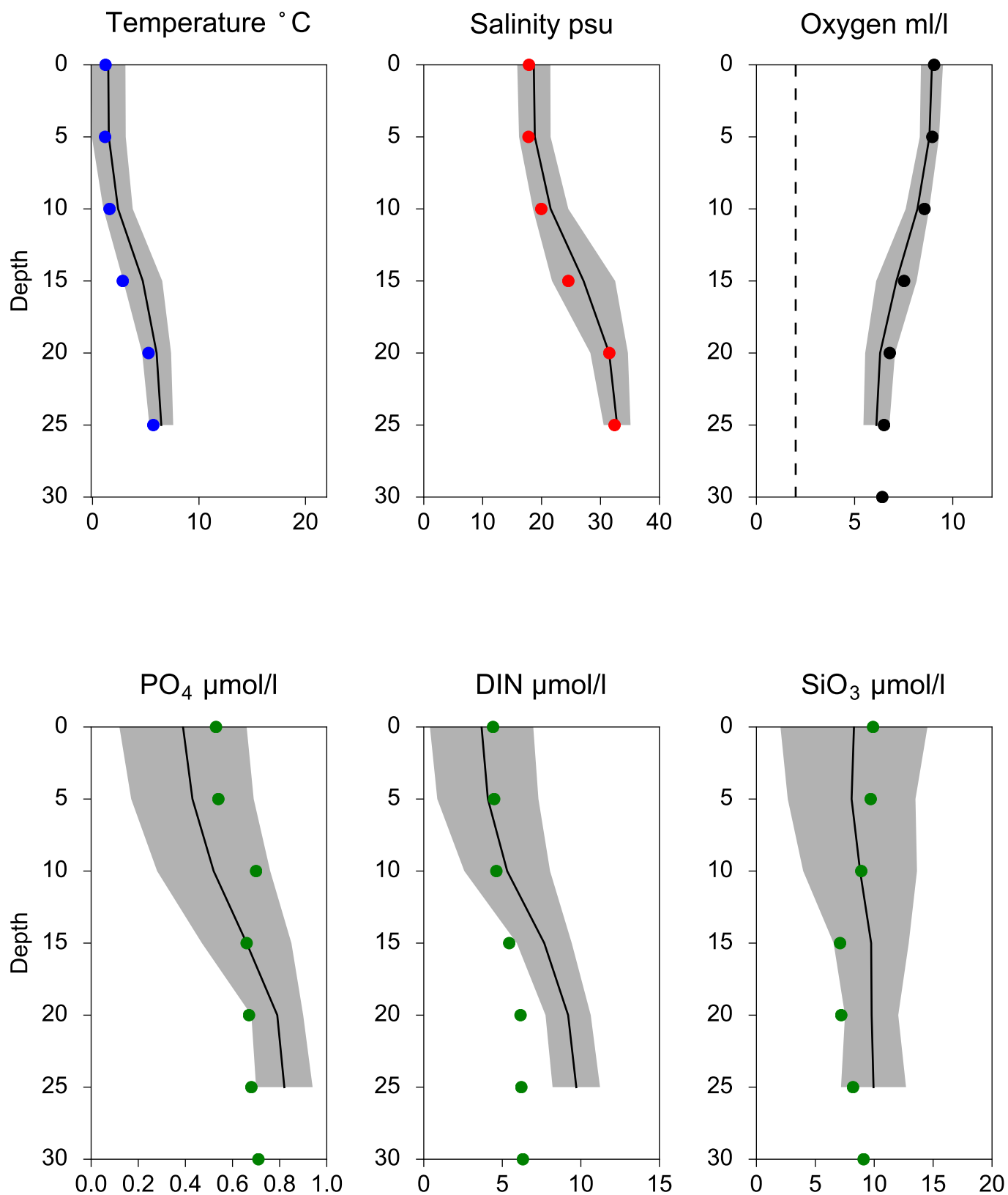


OXYGEN IN BOTTOM WATER (depth >= 25 m)



Vertical profiles N14 FALKENBERG February

— Mean 2001-2015 St.Dev. • 2017-02-14



STATION ANHOLT E SURFACE WATER (0-10 m)

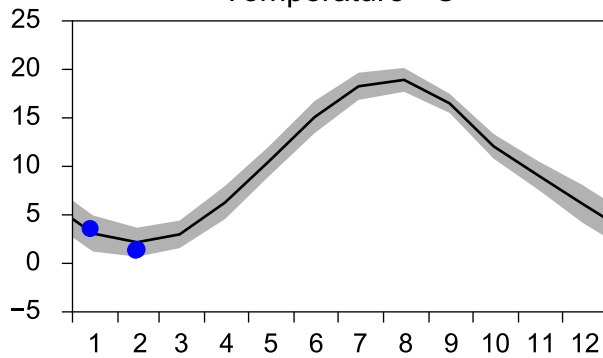
Annual Cycles

— Mean 2001-2015

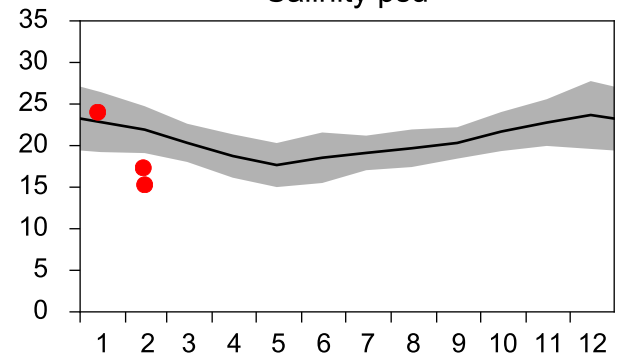
■ St.Dev.

● 2017

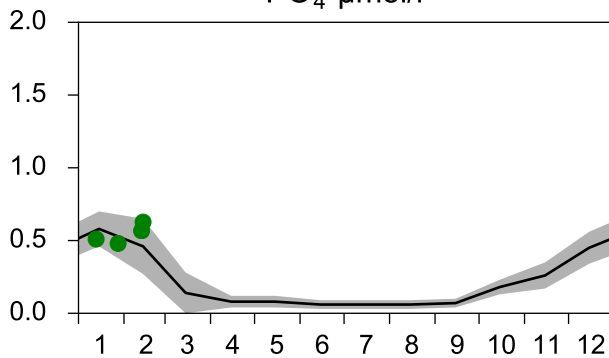
Temperature °C



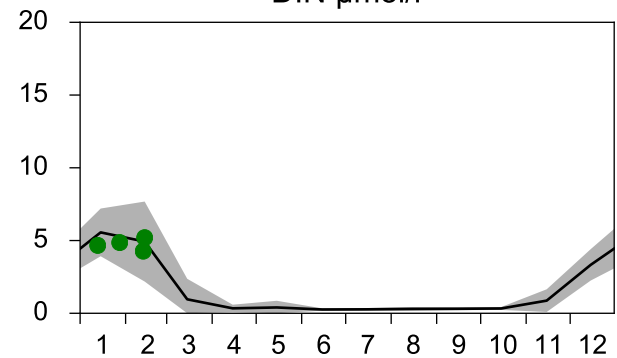
Salinity psu



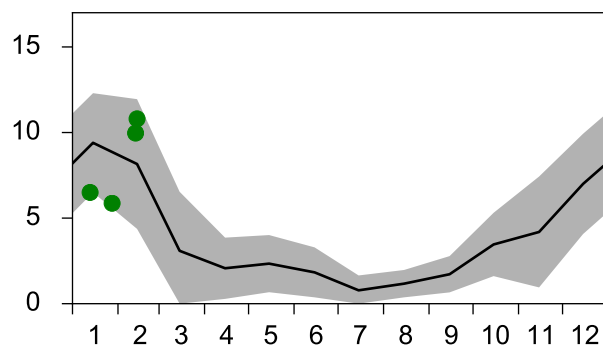
PO₄ µmol/l



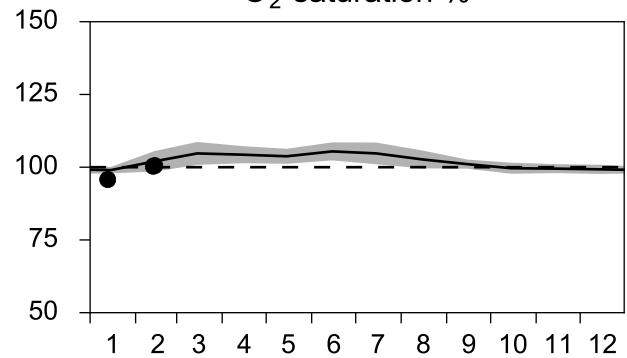
DIN µmol/l



SiO₃ µmol/l

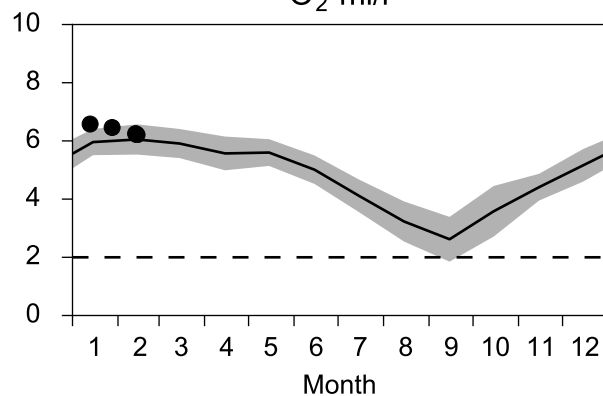


O₂ saturation %

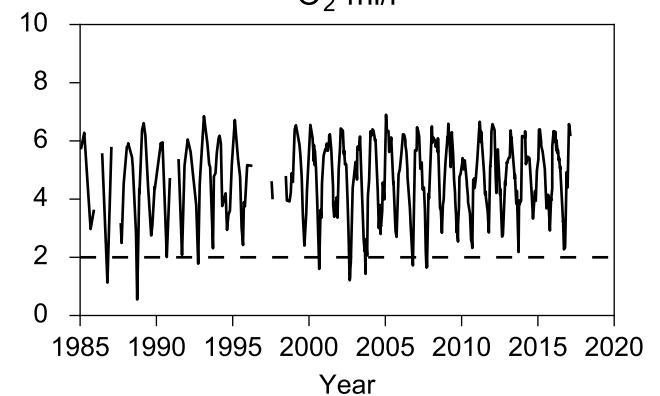


OXYGEN IN BOTTOM WATER (depth >= 52 m)

O₂ ml/l



O₂ ml/l

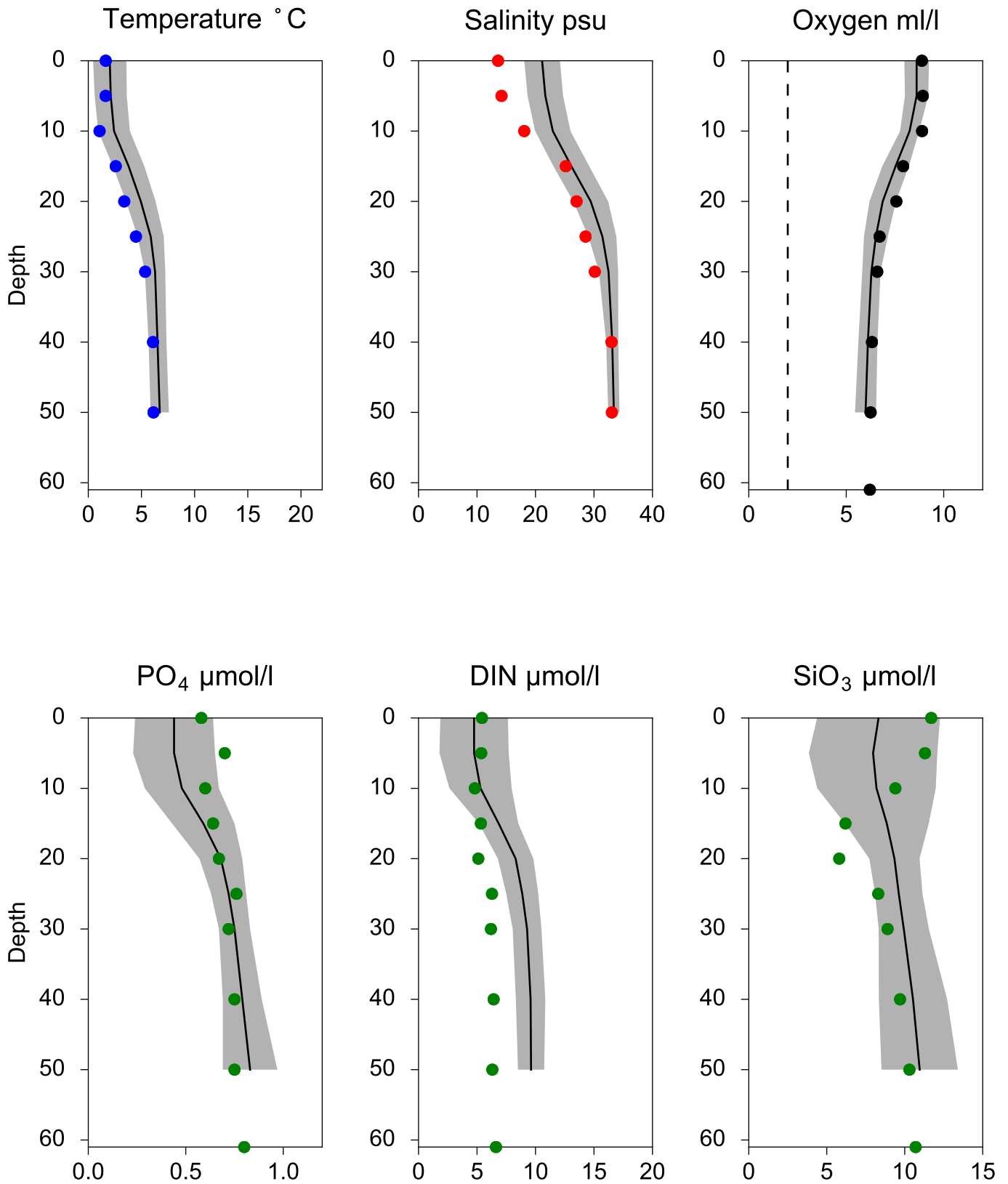


Vertical profiles ANHOLT E February

— Mean 2001-2015

■ St.Dev.

● 2017-02-14



STATION HANÖBUKTEN SURFACE WATER (0-10 m)

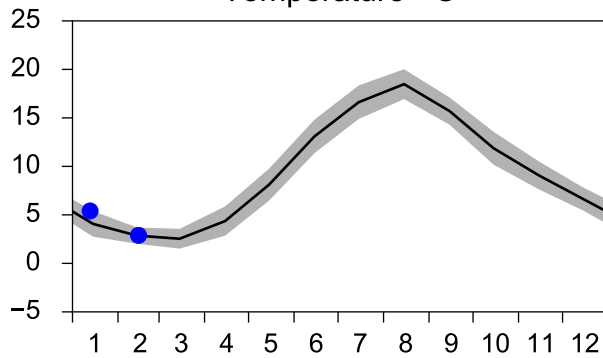
Annual Cycles

— Mean 2001-2015

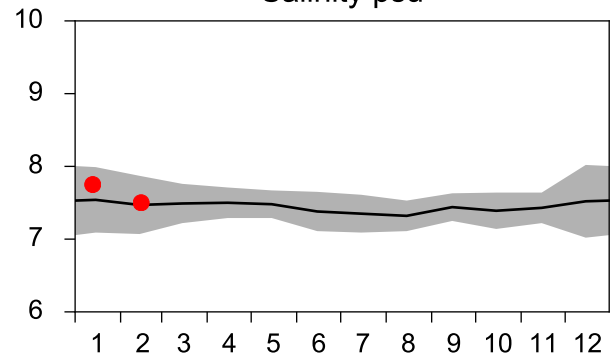
■ St.Dev.

● 2017

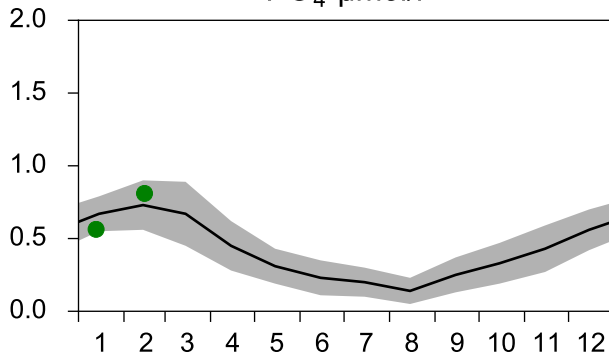
Temperature °C



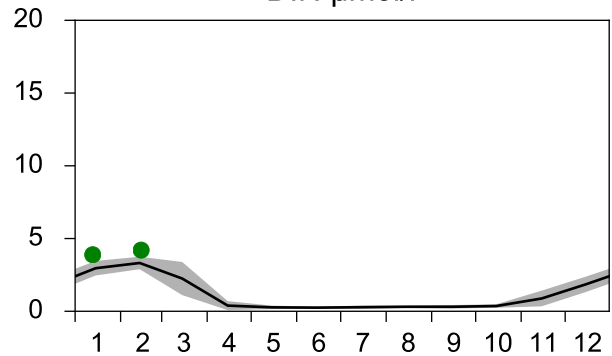
Salinity psu



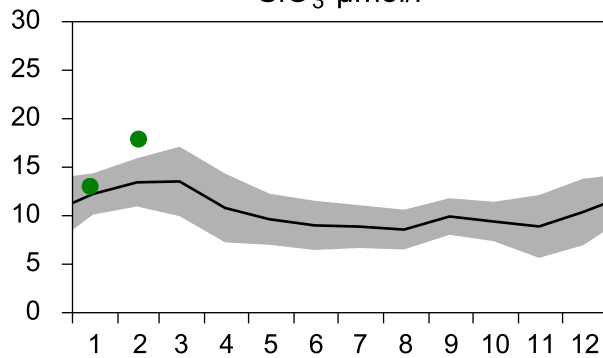
PO₄ µmol/l



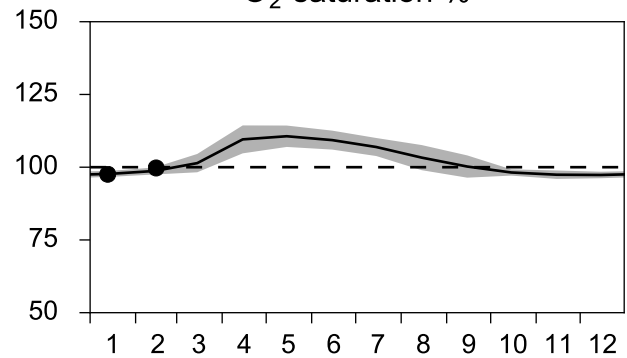
DIN µmol/l



SiO₃ µmol/l

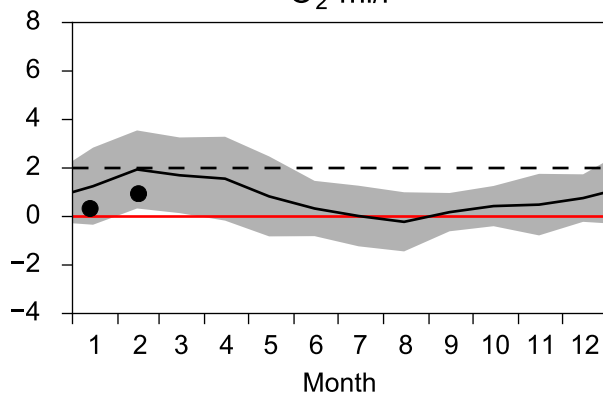


O₂ saturation %

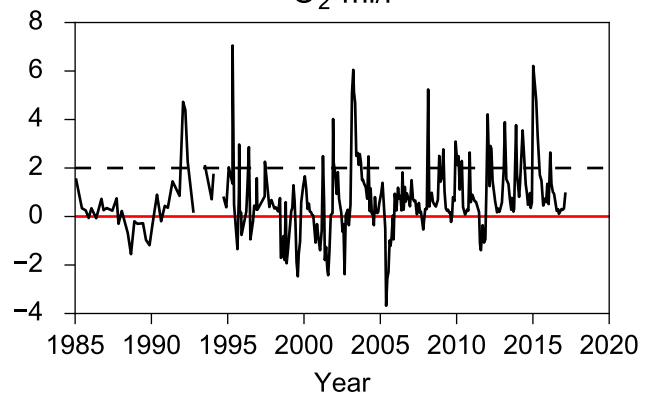


OXYGEN IN BOTTOM WATER (depth >= 70 m)

O₂ ml/l



O₂ ml/l

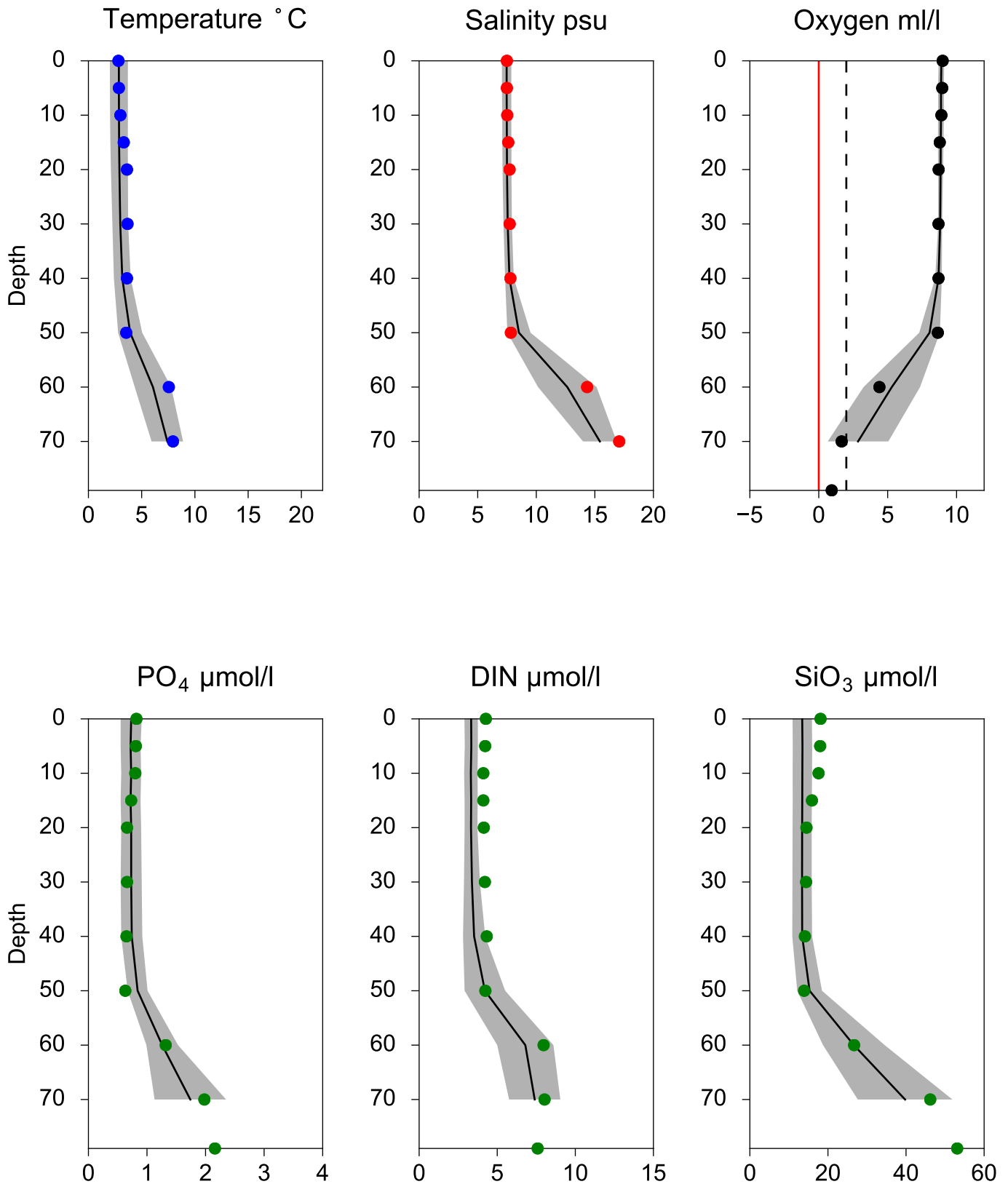


Vertical profiles HANÖBUKTEN February

— Mean 2001-2015

■ St.Dev.

● 2017-02-15



STATION REF M1V1 SURFACE WATER (0-10 m)

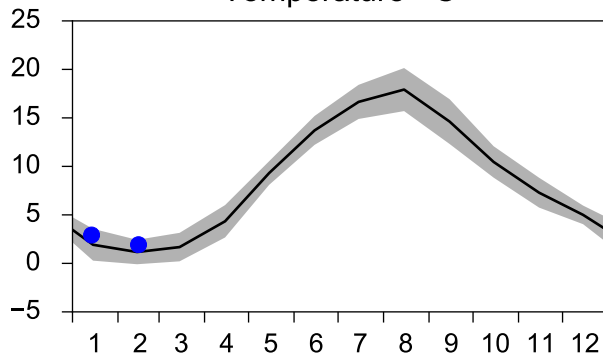
Annual Cycles

— Mean 2001-2015

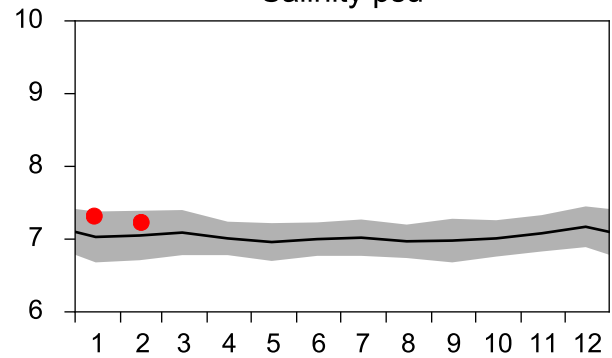
■ St.Dev.

● 2017

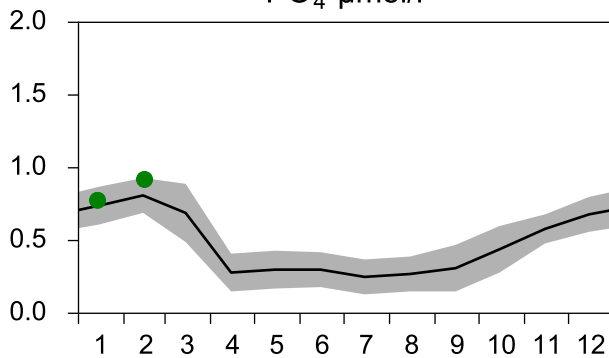
Temperature °C



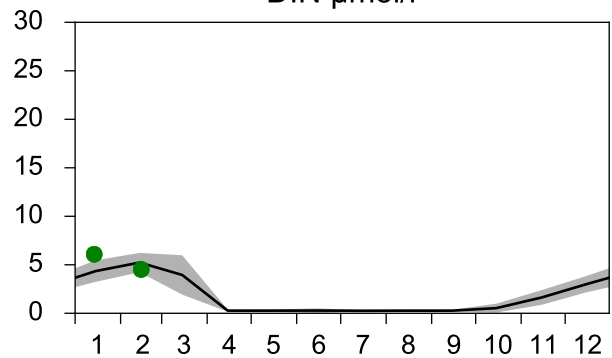
Salinity psu



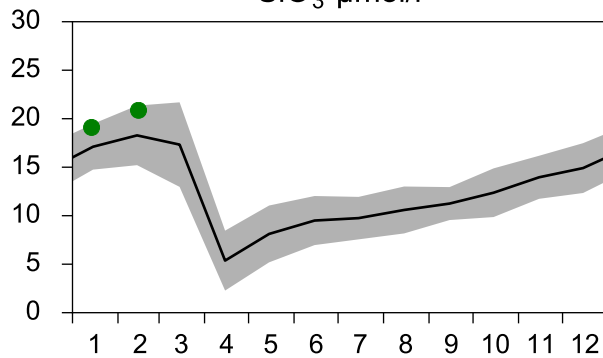
PO₄ µmol/l



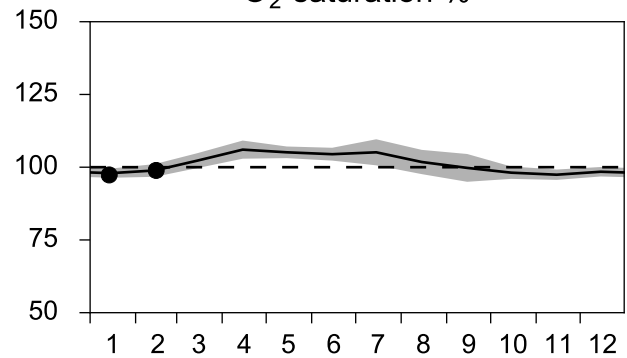
DIN µmol/l



SiO₃ µmol/l

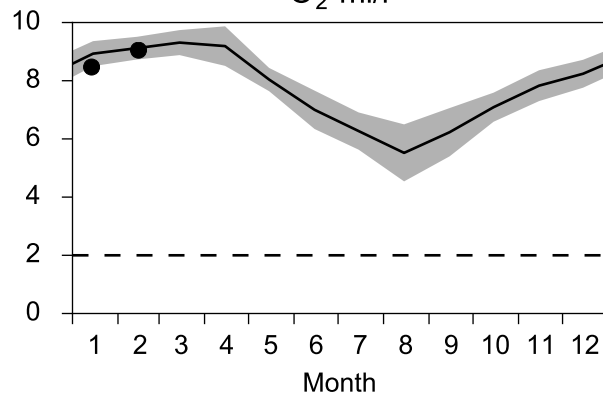


O₂ saturation %

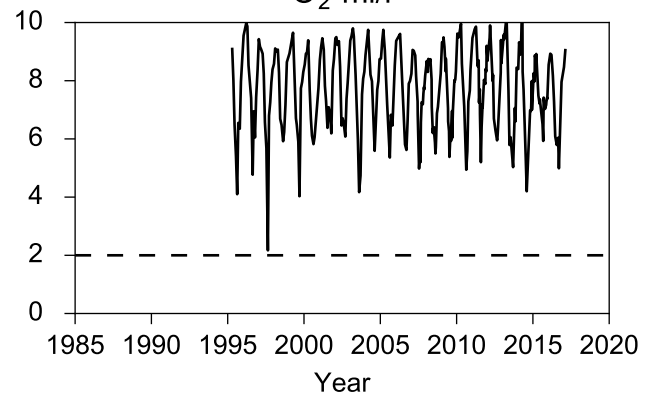


OXYGEN IN BOTTOM WATER (depth >= 17 m)

O₂ ml/l

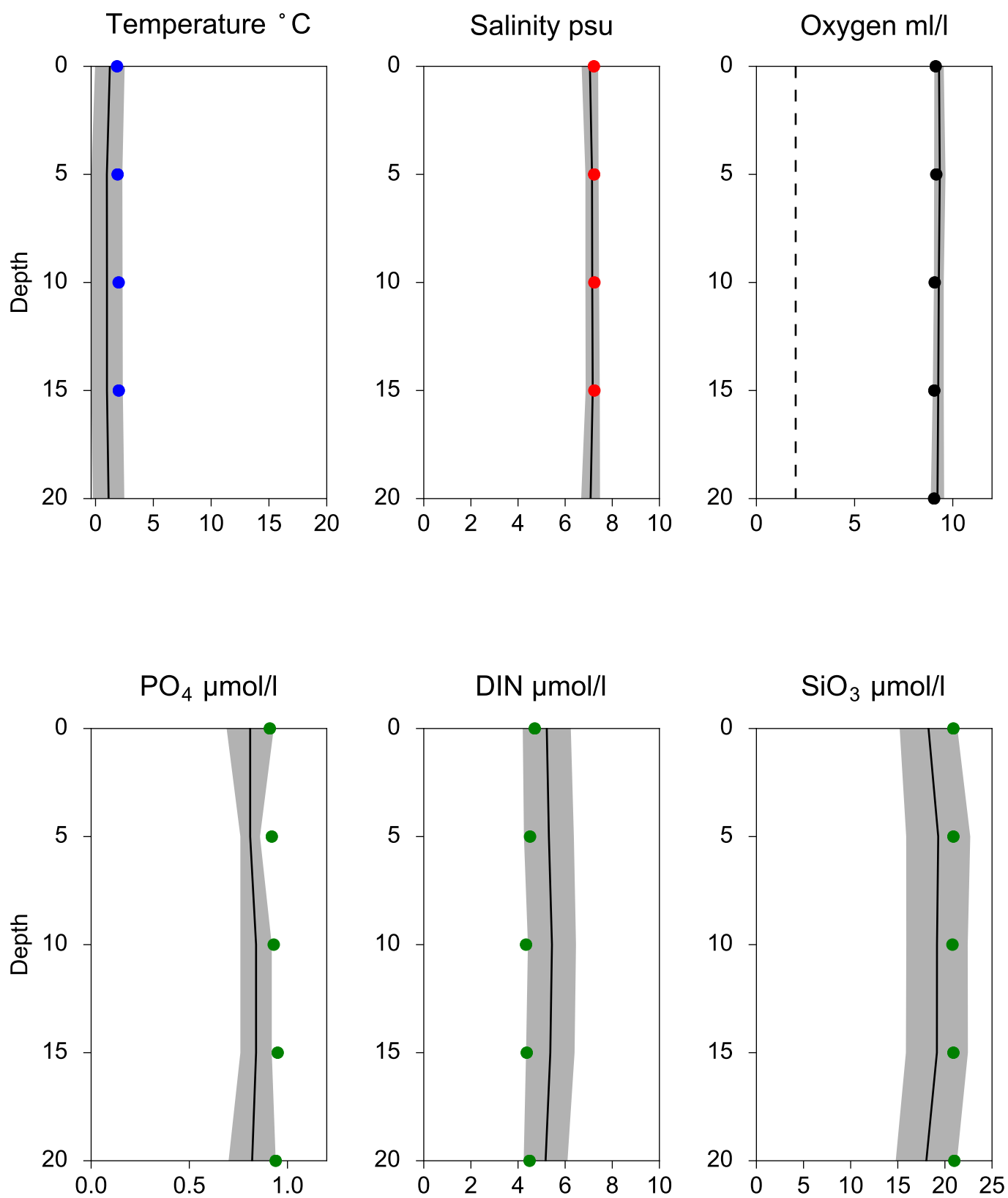


O₂ ml/l



Vertical profiles REF M1V1 February

— Mean 2001-2015 ■ St.Dev. ● 2017-02-15



STATION BY38 KARLSÖDJ SURFACE WATER (0-10 m)

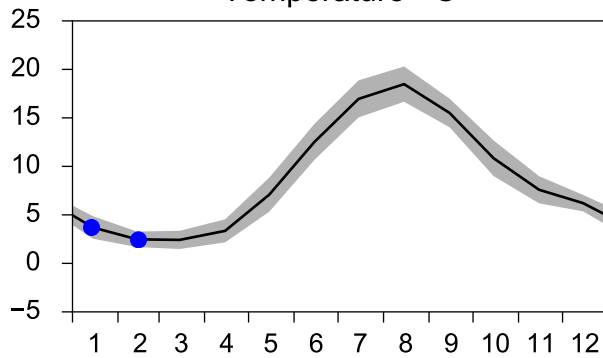
Annual Cycles

— Mean 2001-2015

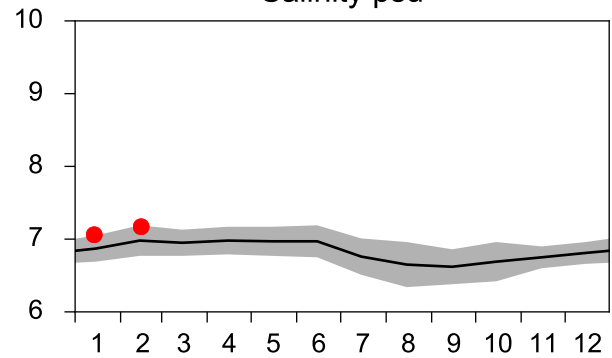
■ St.Dev.

● 2017

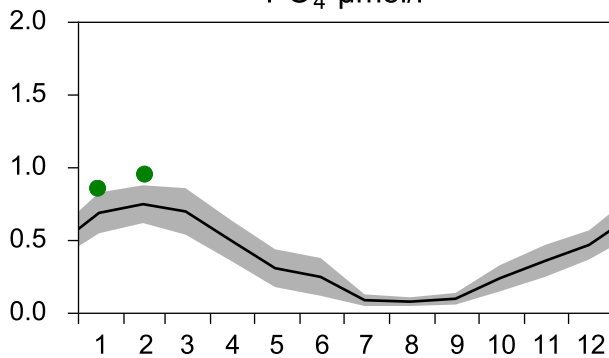
Temperature °C



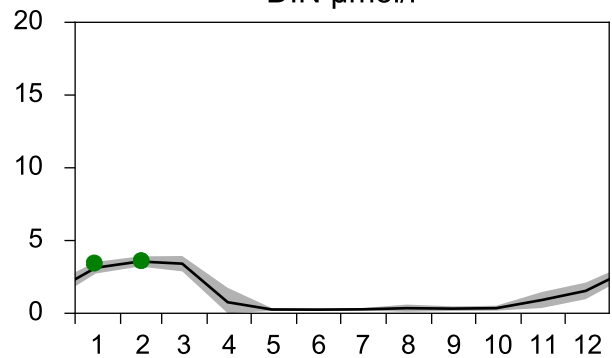
Salinity psu



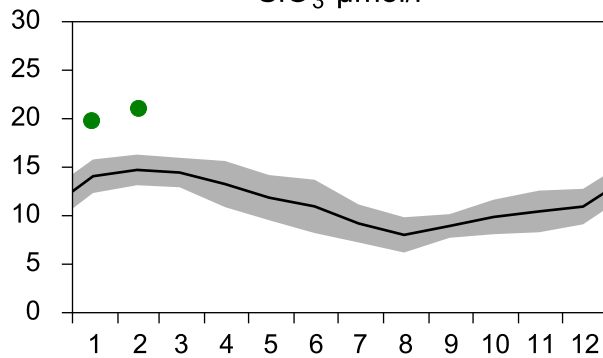
PO₄ µmol/l



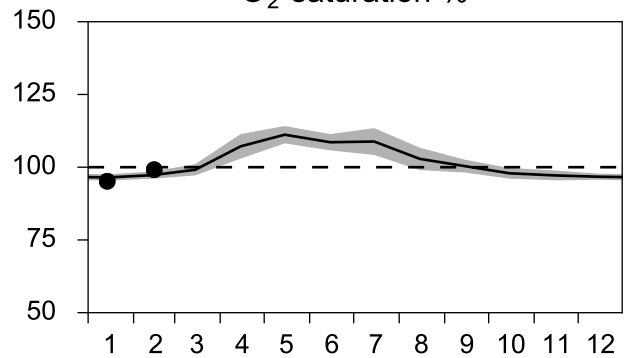
DIN µmol/l



SiO₃ µmol/l

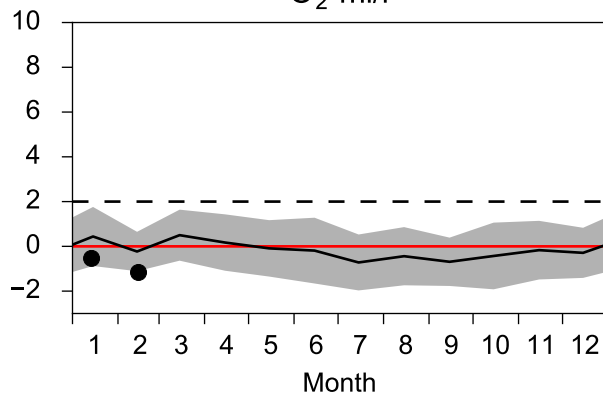


O₂ saturation %

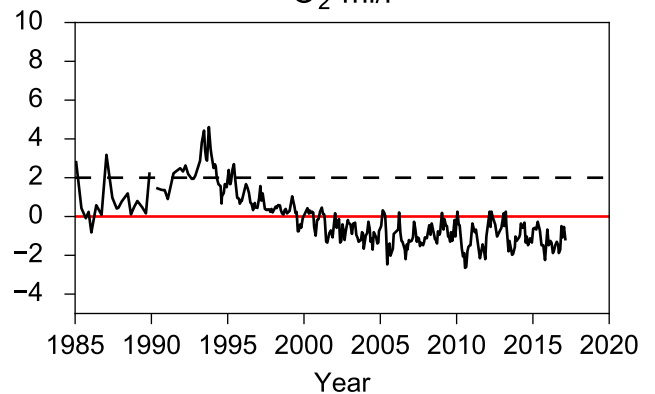


OXYGEN IN BOTTOM WATER (depth >= 100 m)

O₂ ml/l

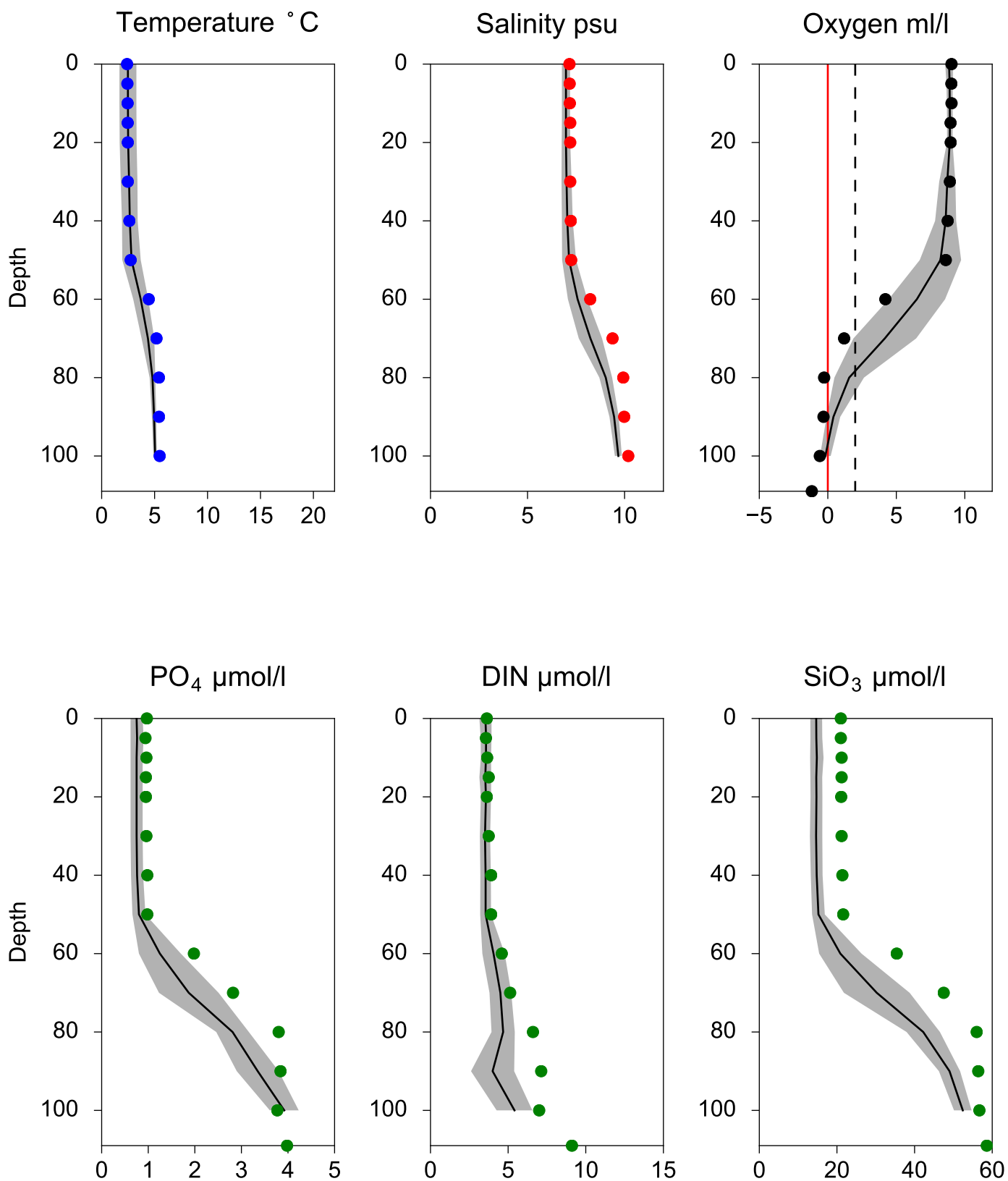


O₂ ml/l



Vertical profiles BY38 KARLSÖDJ February

— Mean 2001-2015 St.Dev. • 2017-02-15



STATION BY32 NORRKÖPINGSDJ SURFACE WATER (0-10 m)

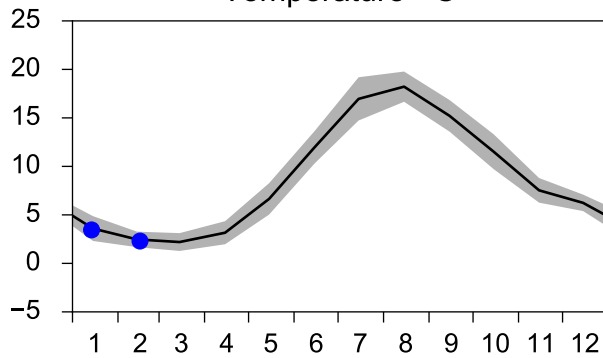
Annual Cycles

— Mean 2001-2015

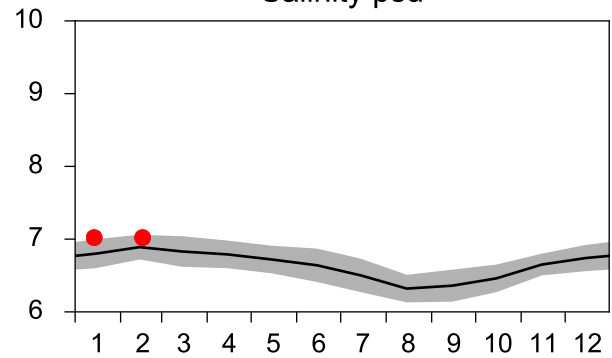
■ St.Dev.

● 2017

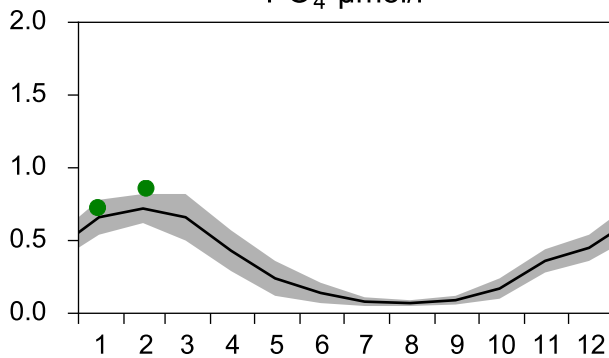
Temperature °C



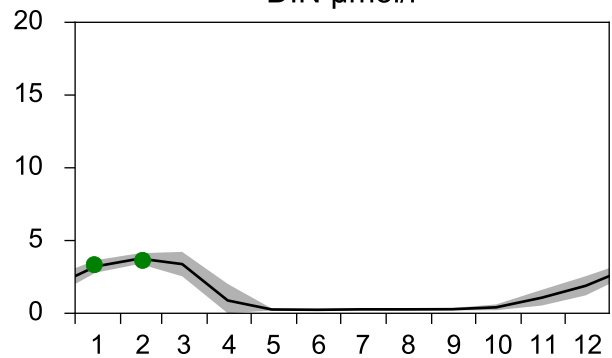
Salinity psu



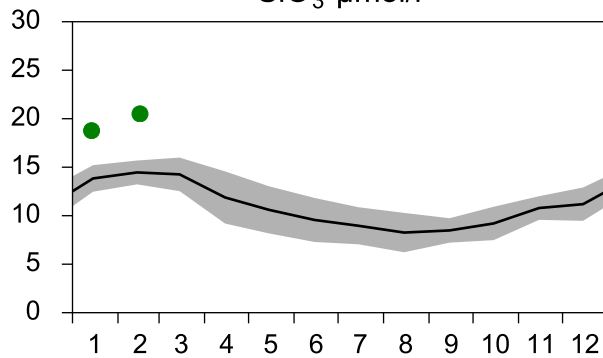
PO₄ µmol/l



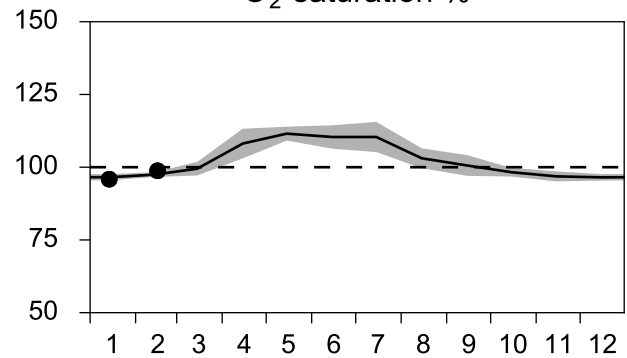
DIN µmol/l



SiO₃ µmol/l

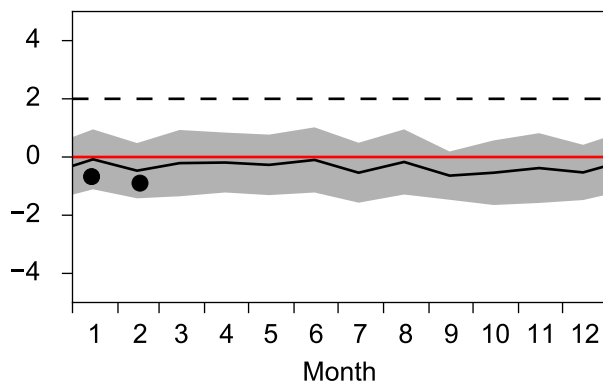


O₂ saturation %

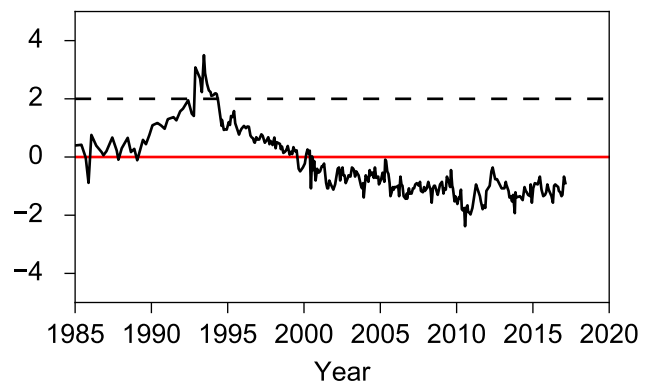


OXYGEN IN BOTTOM WATER (depth >= 175 m)

O₂ ml/l

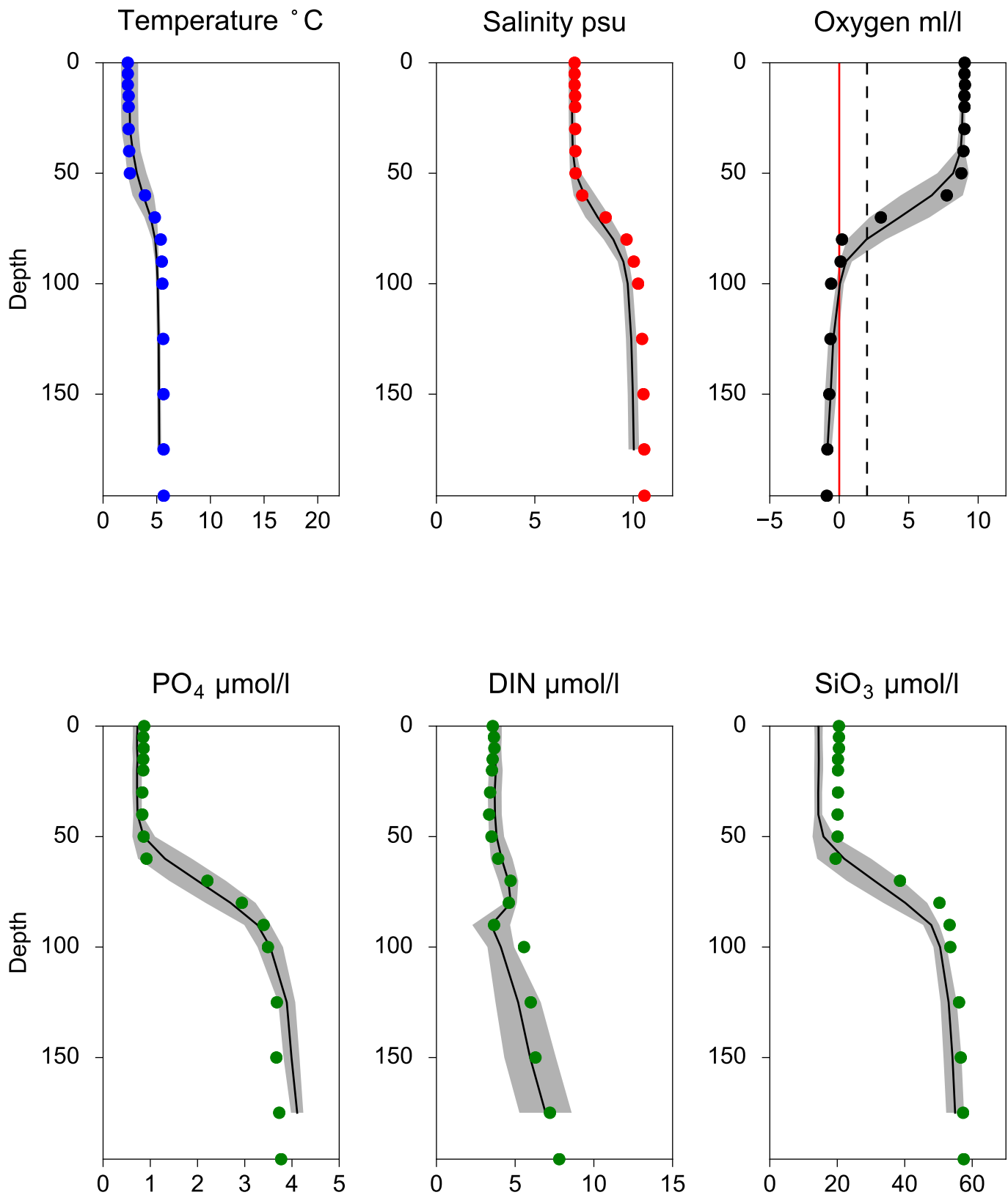


O₂ ml/l



Vertical profiles BY32 NORRKÖPINGSDJ February

— Mean 2001-2015 St.Dev. • 2017-02-16



STATION BY31 LANDSORTSDJ SURFACE WATER (0-10 m)

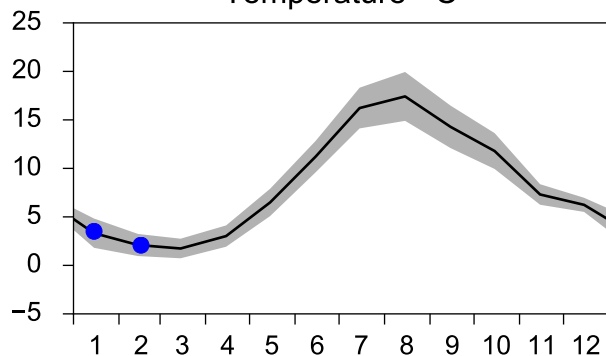
Annual Cycles

— Mean 2001-2015

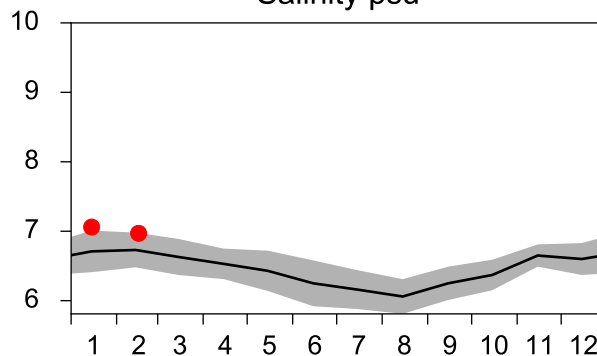
■ St.Dev.

● 2017

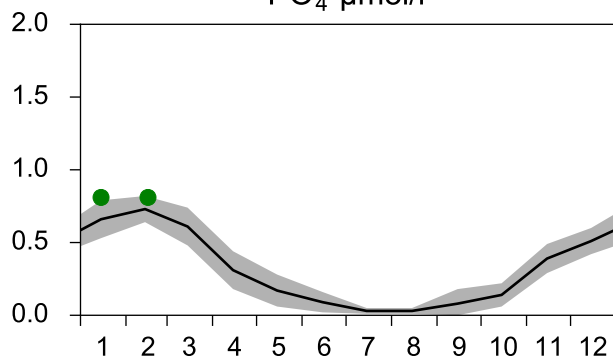
Temperature °C



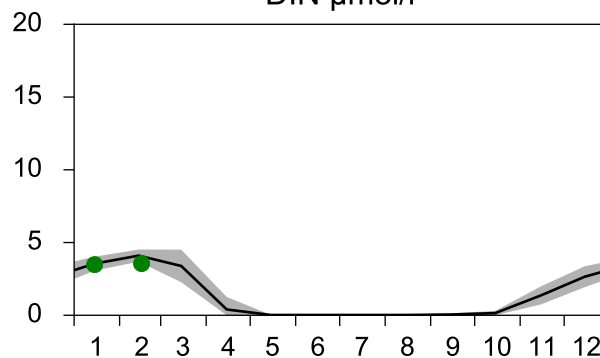
Salinity psu



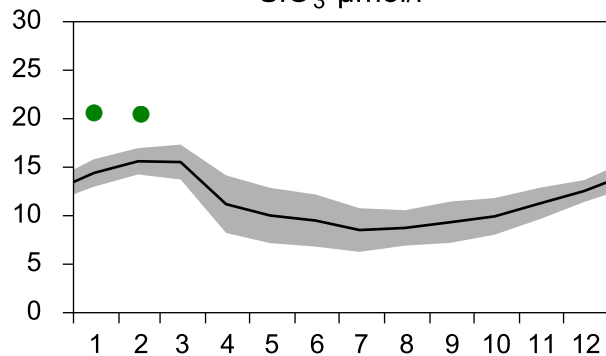
PO₄ µmol/l



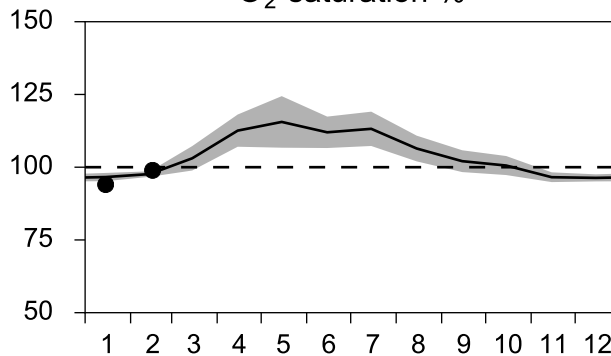
DIN µmol/l



SiO₃ µmol/l

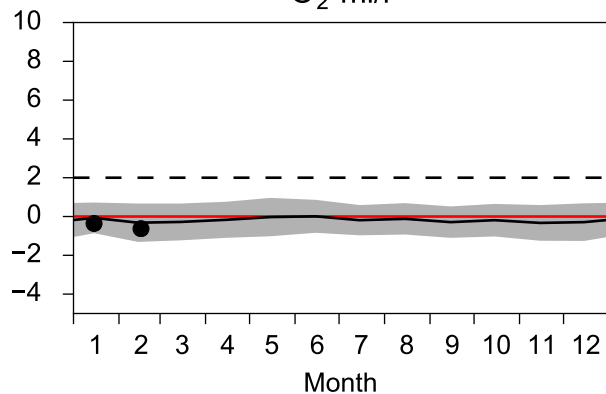


O₂ saturation %

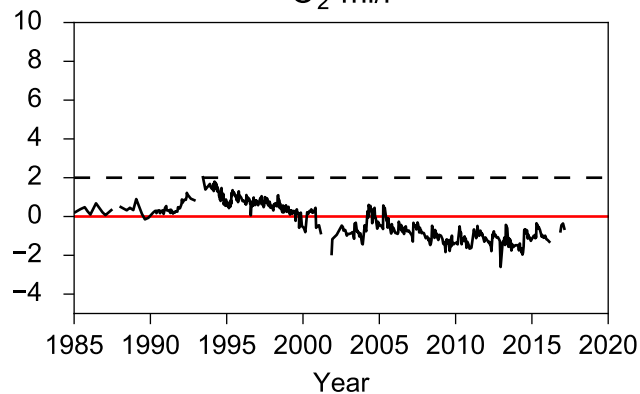


OXYGEN IN BOTTOM WATER (depth >= 425 m)

O₂ ml/l



O₂ ml/l



Vertical profiles BY31 LANDSORTSDJ February

— Mean 2001-2015 ■ St.Dev. ● 2017-02-16

