

Expeditionsrapport från U/F Dana Cruise report from R/V Dana



Expeditionens varaktighet / period: 2015-08-20 - 2015-08-31
Undersökningsområde / area: Skagerrak / Kattegatt
Uppdragsgivare / principal: SLU / Swedish University of Agricultural Sciences
SMHI/ Swedish Agency for Marine and Water Management

SUMMARY

The expedition was included within SLUs International Bottom Trawl Survey and covered the Skagerrak and the Kattegat. Also during the expedition, SMHIs standard frequent stations were visited.

In Skagerrak 5 stations with complete hydrography were sampled and in Kattegat 4 stations.

Surface temperatures were typical for the season, while the surface salinity was clearly below normal.

All nutrients showed normal values in both areas.

Oxygen conditions in the bottom waters of Skagerrak were good, while in parts of the southern Kattegat some low values were measured.

PRELIMINÄRA RESULTAT

Expeditionen, som ingick i SLU:s beståndsuppskattning av bottenlevande fisk i Skagerrak och Kattegatt, startade i Hirtshals torsdagen den 20 augusti och avslutades i Lysekil måndagen den 31. Vid 5 stationer i Skagerrak, vilka ingick i SMHIs ordinarie stationsnät, togs fullständig hydrografi. Vid 19 stationer i området gjordes CTD-mätningar i samband med trålning.

I Kattegatt togs komplett hydrografi på 4 stationer, varav 3 ingick i SMHI:s ordinarie program. Vid ytterligare 26 stationer utfördes CTD-mätningar i samband med trålning, vid 16 av dessa togs dessutom syreprov i djupvattnet.

Vindarna under expeditionen var i huvudsak svaga till måttliga, under första delen i huvudsak från nord till ost, därefter viridande till sydväst. Lufttemperaturen varierade mellan 16 och 21°C.

Skagerrak

Ytvattentemperaturerna låg mellan 16.7 och 18.9°C, lägst i väster och högst i de östra delarna närmast kusten. Ytsalthalten var mycket lägre än normalt i hela det undersökta området och varierade från 17.9 psu i de östra delarna till 33.8 psu längst västerut. Haloklinen låg på 10 till 20 meters djup, medan termoklinen, vilken var svagt utvecklad, återfanns på djup mellan 10 och 50 meter.

Samtliga närsalter uppvisade normala koncentrationer i ytvattnet, fosfathalterna låg mellan 0.04 och 0.12 µmol/l, summa nitrit + nitrat låg under detektionsgränsen (< 0.10 µmol/l) medan halterna av silikat varierade från 0.1 till 0.8 µmol/l.

Syreförhållandena i bottenvattnet var goda i hela området. Det lägsta värdet uppmättes till 4.59 ml/l.

Kattegatt

I Kattegatt låg ytvattentemperaturerna vid de besökta stationerna mellan 17.4 och 18.2°C. Även här låg ytsalthalten klart under det normala, i sydväst uppmättes 14.5 psu, i sydost 16.5 psu, medan de högsta värdena ca 19 psu återfanns längst i norr. I Kattegatt återfanns både haloklin och termoklin på djup mellan 10 och 20 meter.

Fosfathalten i ytlagret låg mellan 0.11 och 0.19 µmol/l, summa nitrit + nitrat låg under detektionsgränsen, medan silikatkoncentrationerna låg i intervallet 1.7 till 3.7 µmol/l.

De lägsta syrehalterna i bottenvattnet uppmättes i Skälderviken och Laholmsbukten, 2.65 respektive 3.52 ml/l. I öppna Kattegatt uppmättes som lägst 3.54 ml/l utanför Kullen samt 3.76 ml/l utanför Grenå.



DELTAGARE

Namn

Lars Andersson

Johan Håkansson

Daniel Bergman-Sjöstrand

Expeditionsledare

Från

SMHI

SMHI

SMHI

BILAGOR

- Tabell över stationer, antal parametrar och provtagningsdjup
- Karta över syrehalter i bottenvattnet
- Vertikalprofiler för basstationer
- Månadsmedelvärdesplottar för ytvatten

Bottom water oxygen concentration (ml/l)

Country: Denmark

Ship : Dana

Date : 20150821-20150831

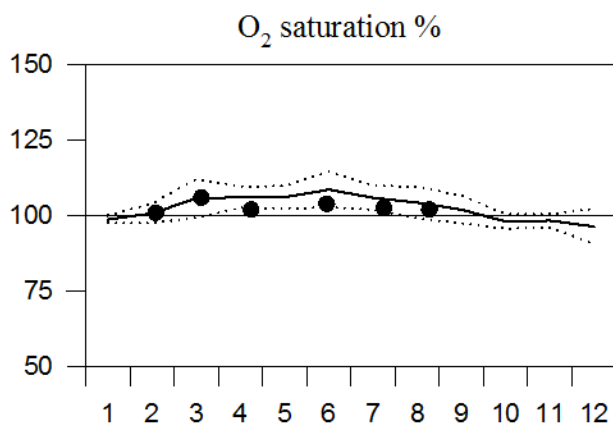
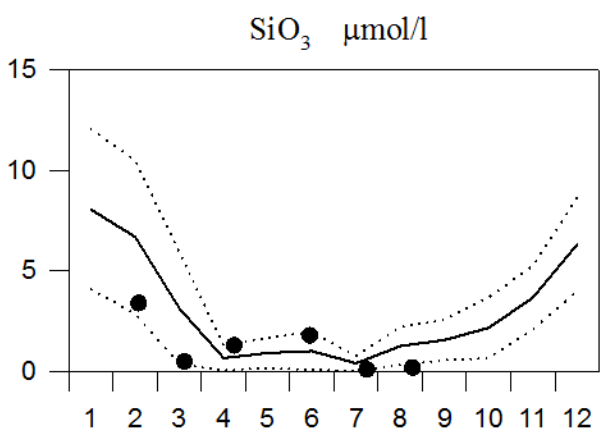
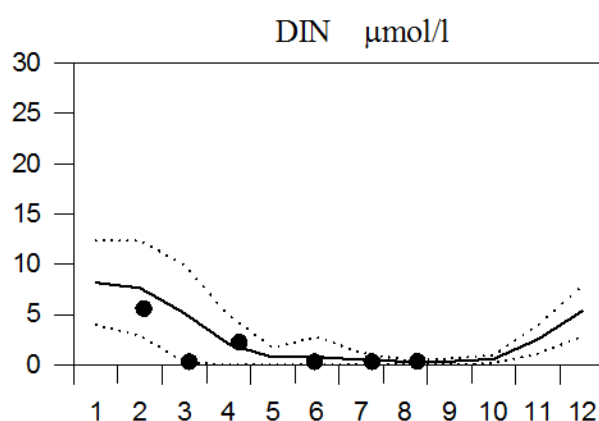
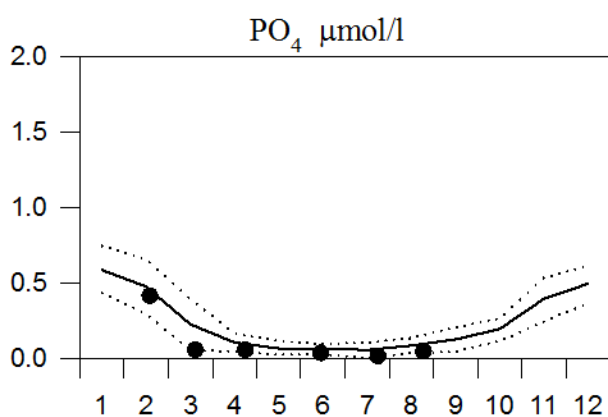
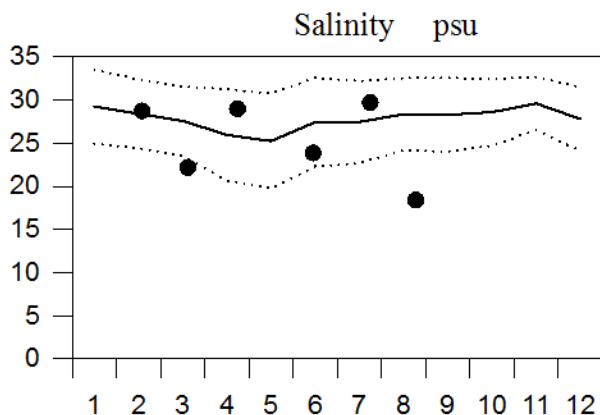
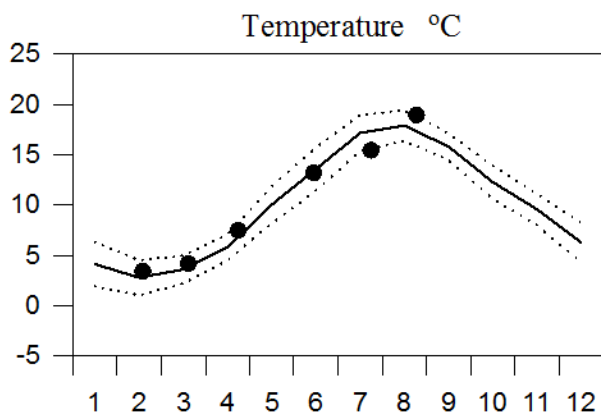
Series : 0801-0855



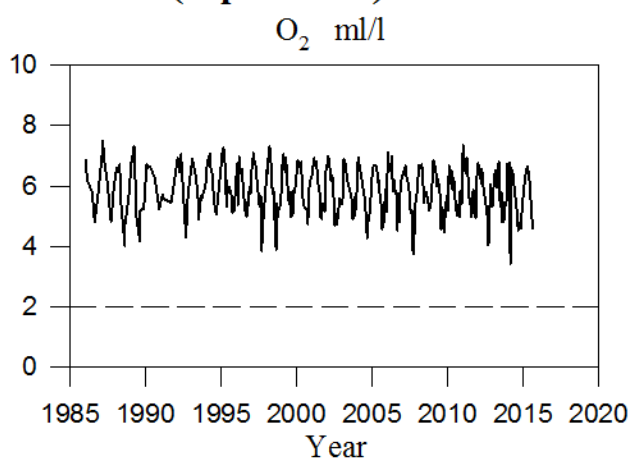
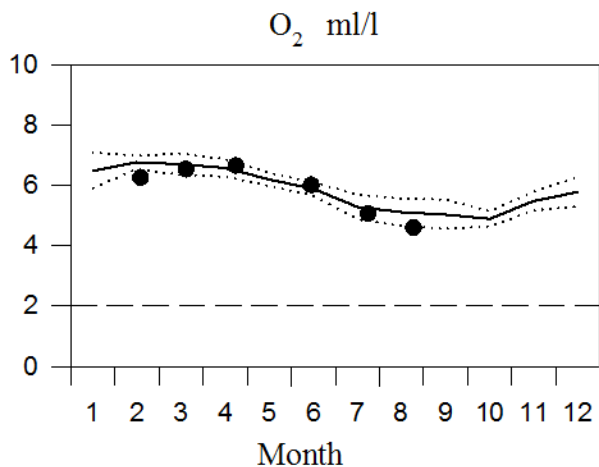
STATION P2 SURFACE WATER

Annual Cycles

— Mean 1996-2010 ····· St.Dev. ● 2015

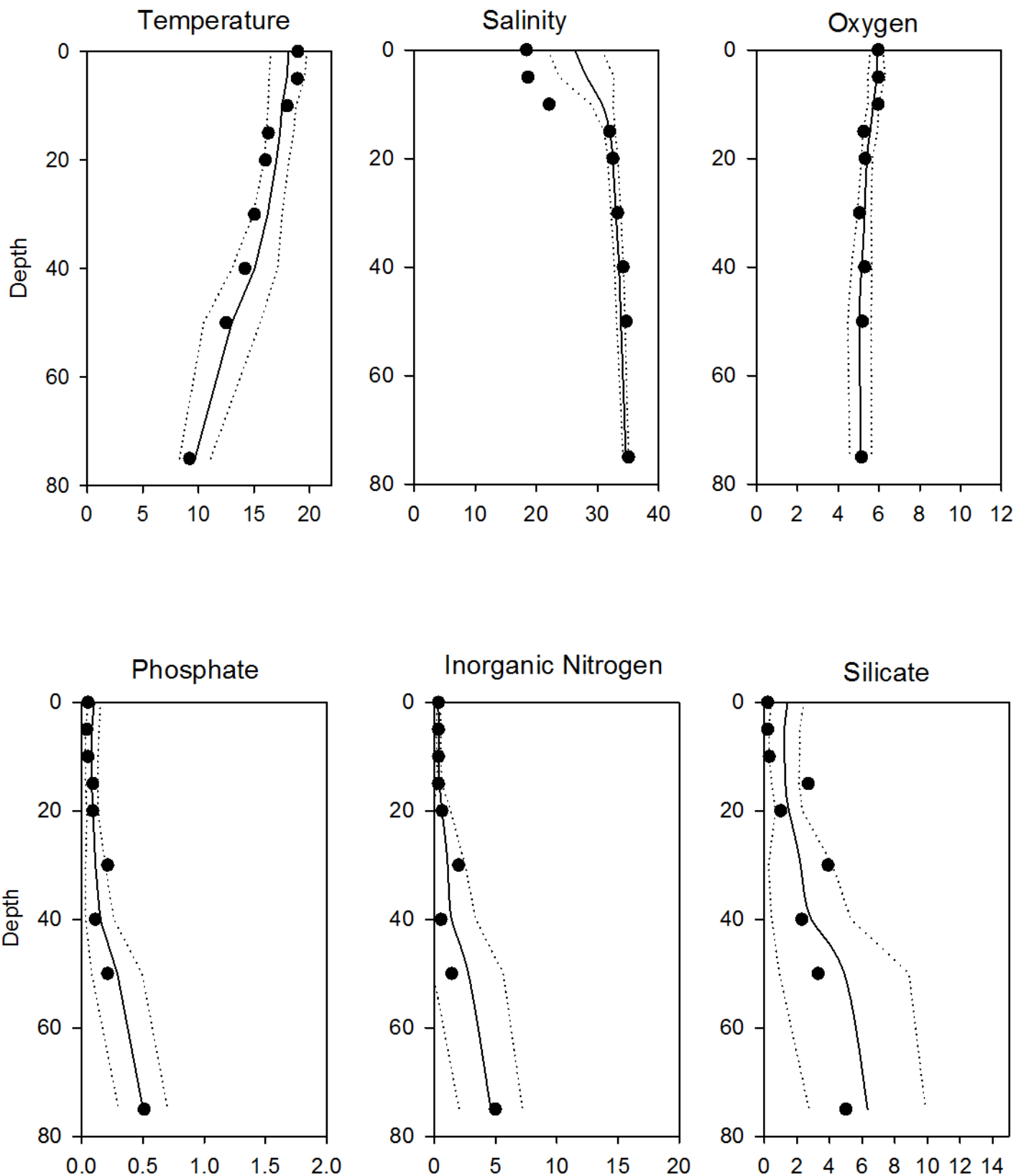


OXYGEN IN BOTTOM WATER (depth >75m)



Vertical profiles P2 August

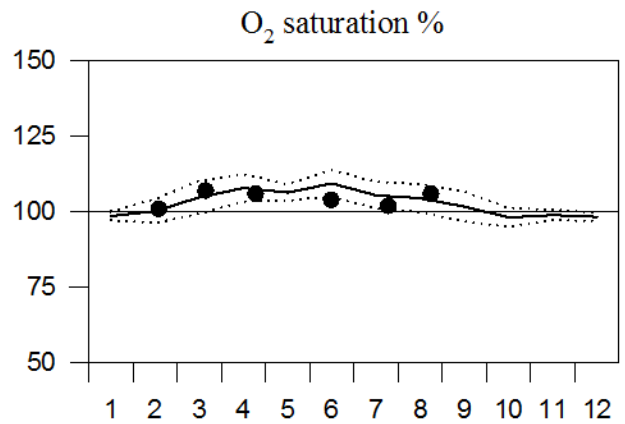
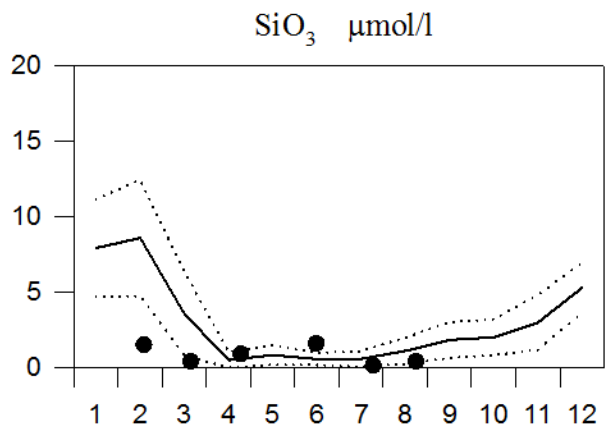
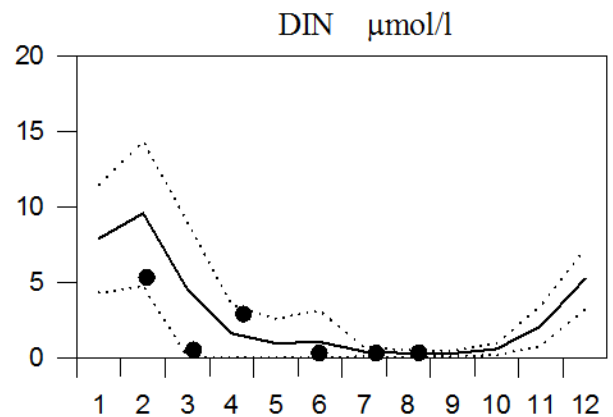
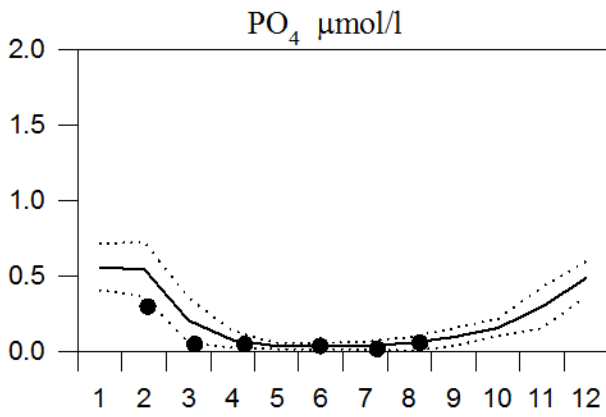
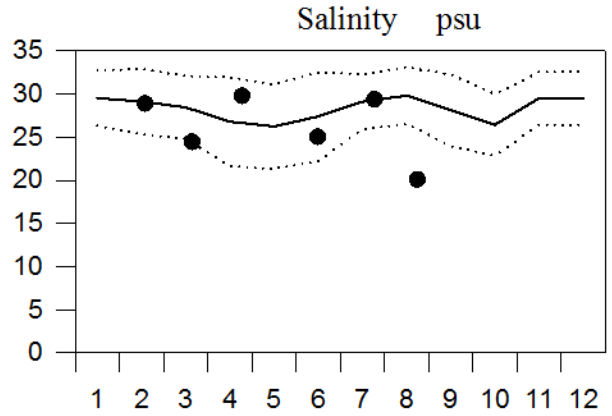
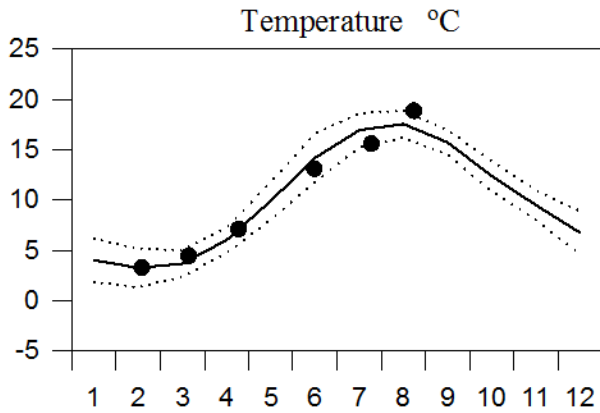
— Mean 1996-2010 St.Dev. ● 2015



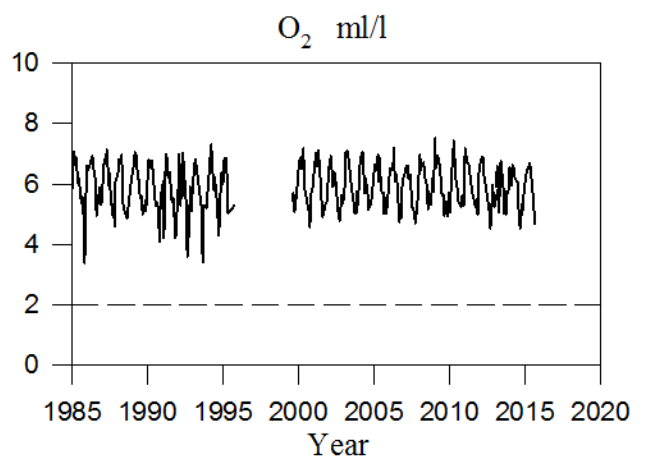
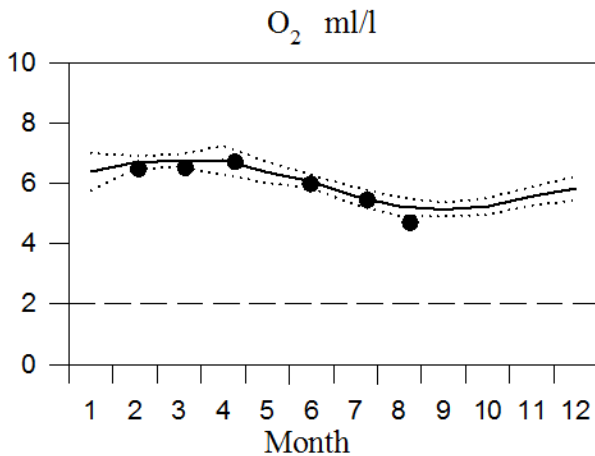
STATION Å13 SURFACE WATER

Annual Cycles

— Mean 1996-2010 St.Dev. ● 2015

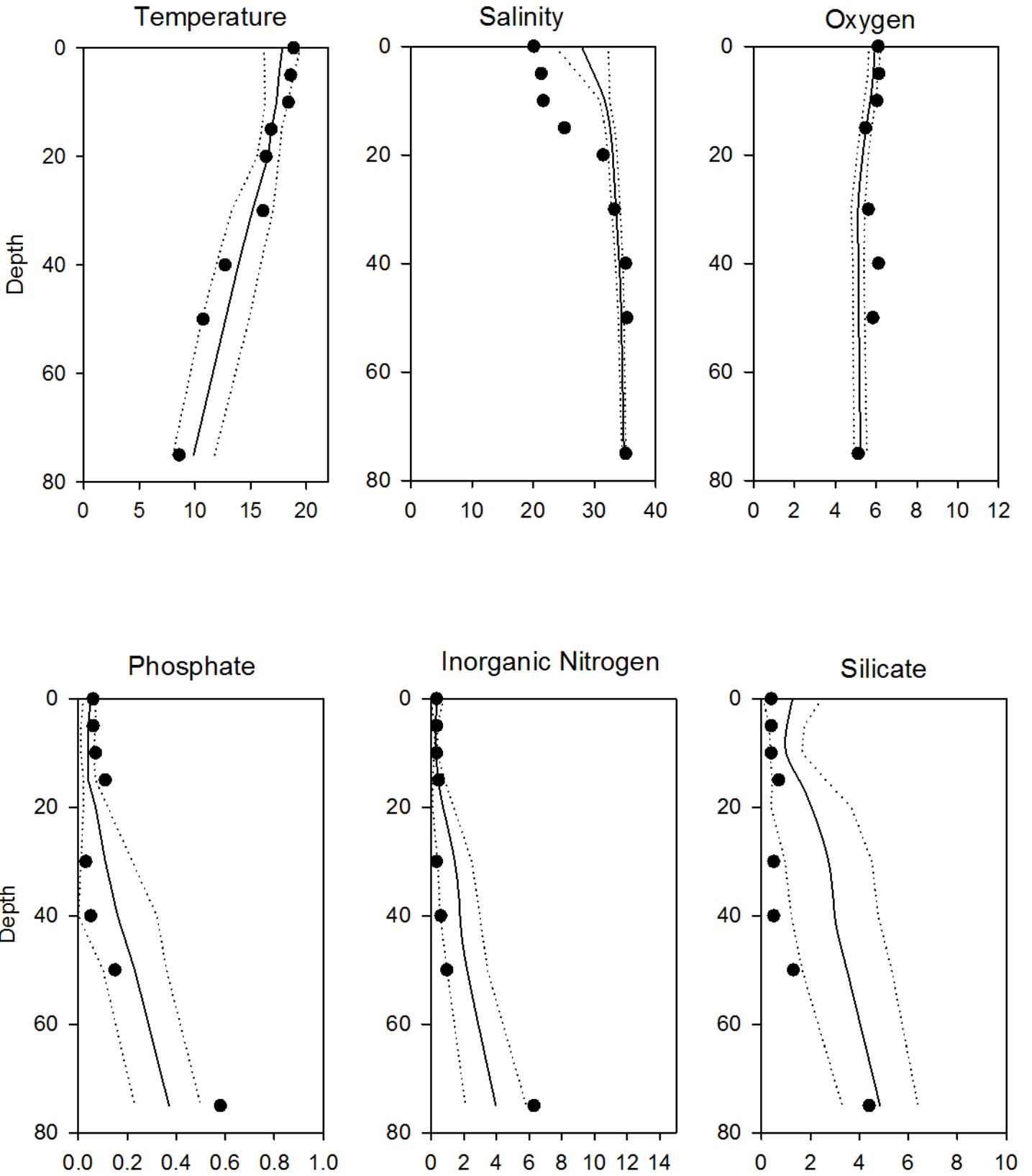


OXYGEN IN BOTTOM WATER (depth >=75m)



Vertical profiles Å13 August

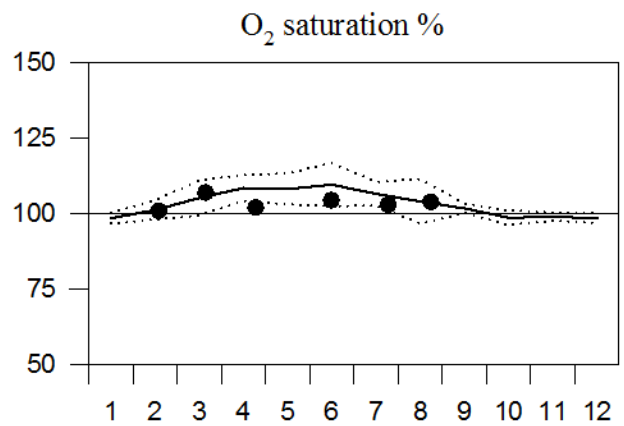
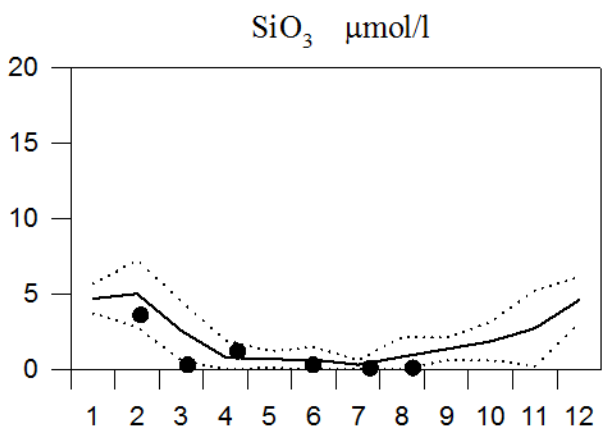
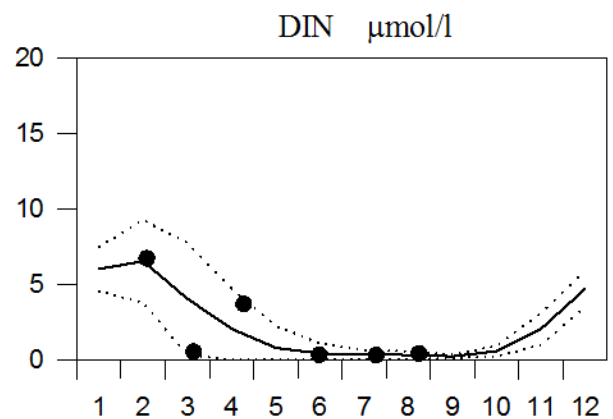
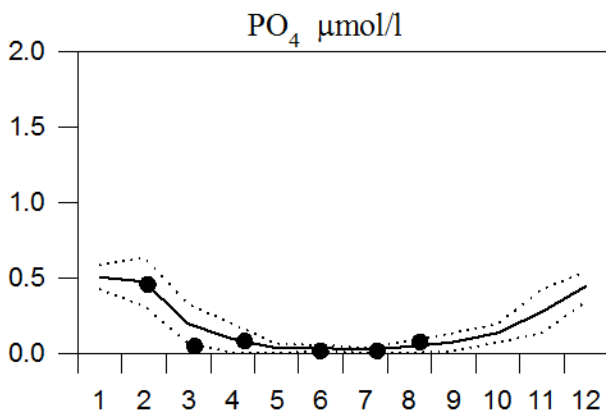
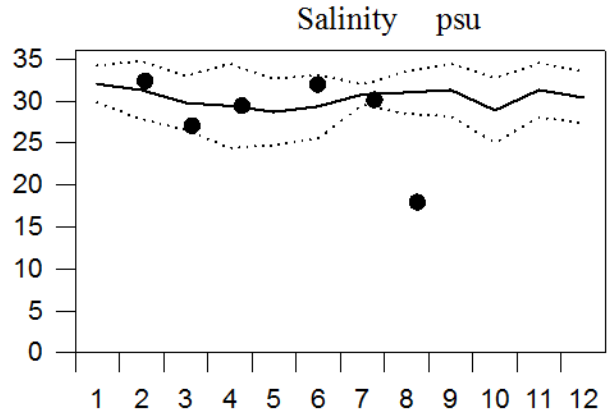
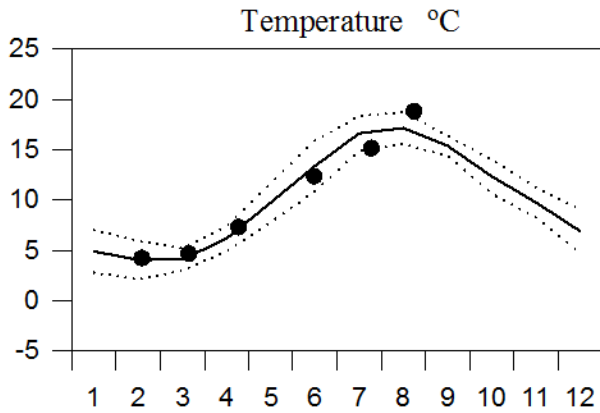
— Mean 1996-2010 St.Dev. ● 2015



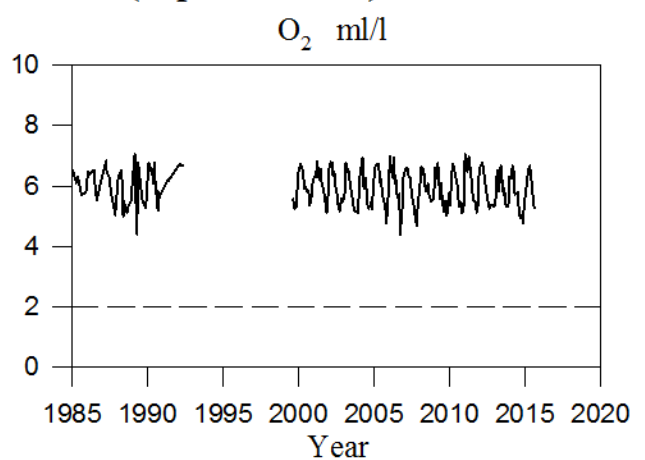
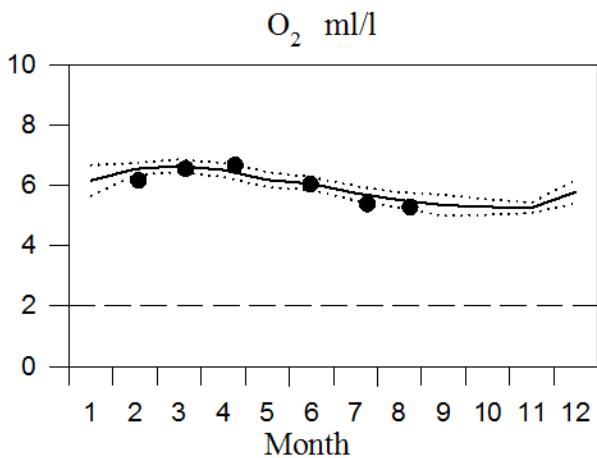
STATION Å15 SURFACE WATER

Annual Cycles

— Mean 1996-2010 ····· St.Dev. ● 2015

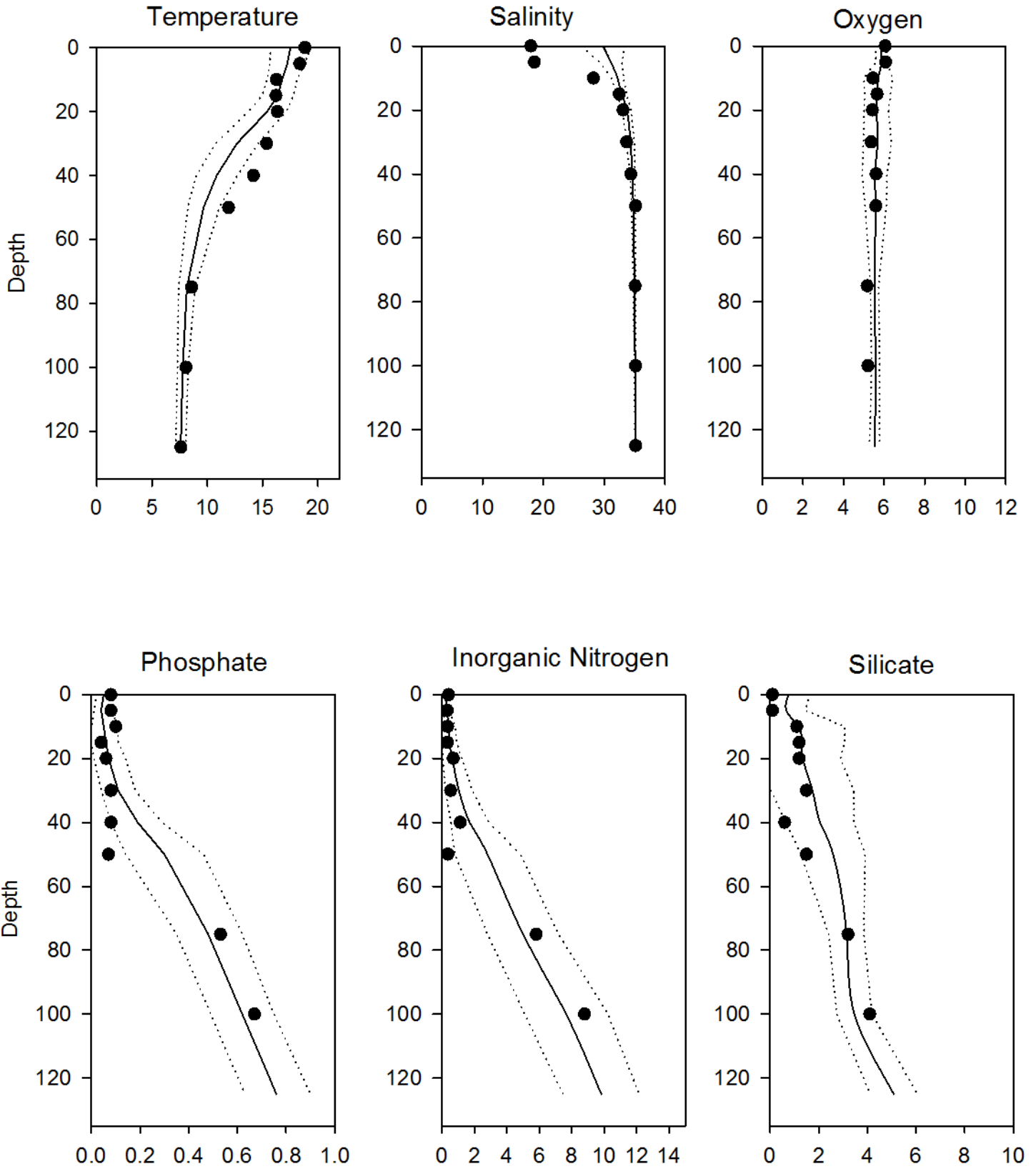


OXYGEN IN BOTTOM WATER (depth >=125m)



Vertical profiles Å15 August

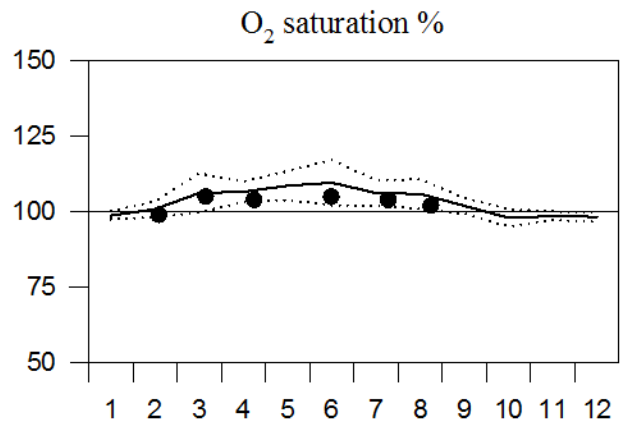
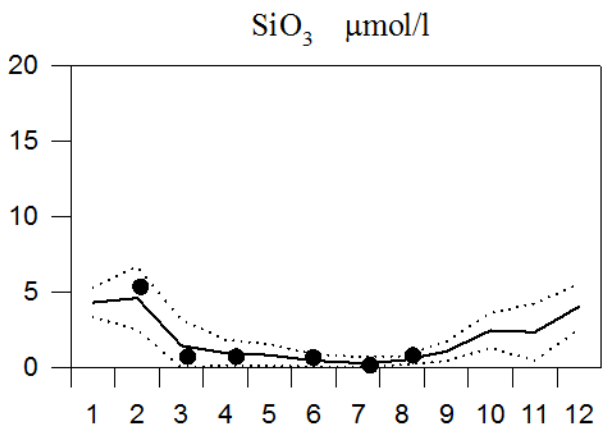
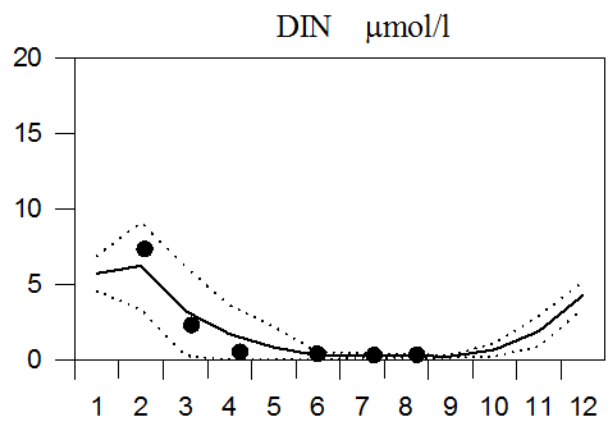
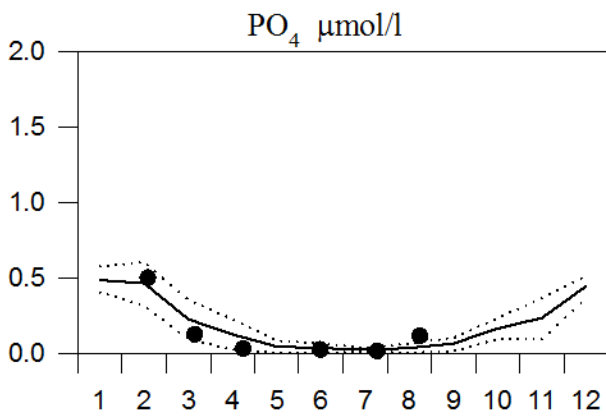
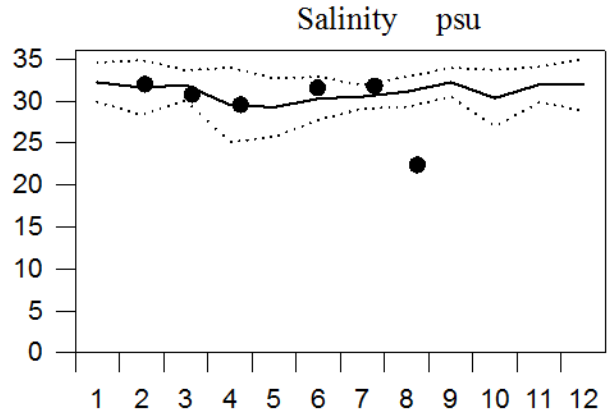
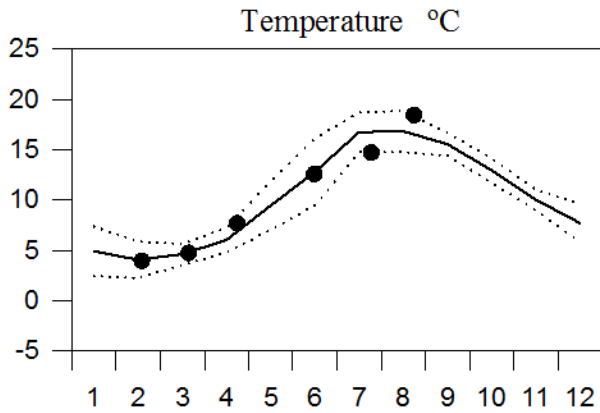
— Mean 1996-2010 St.Dev. ● 2015



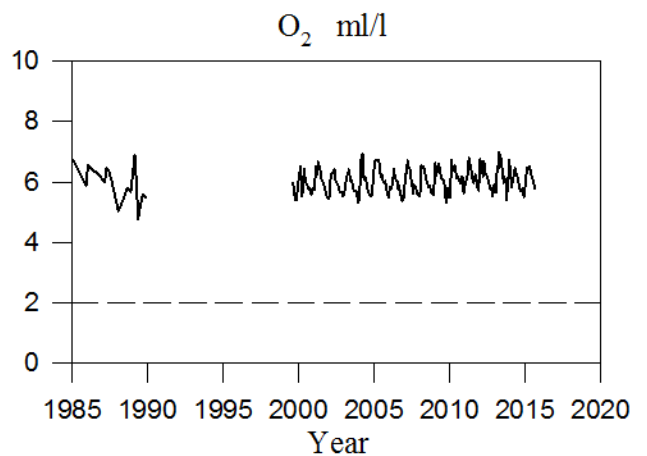
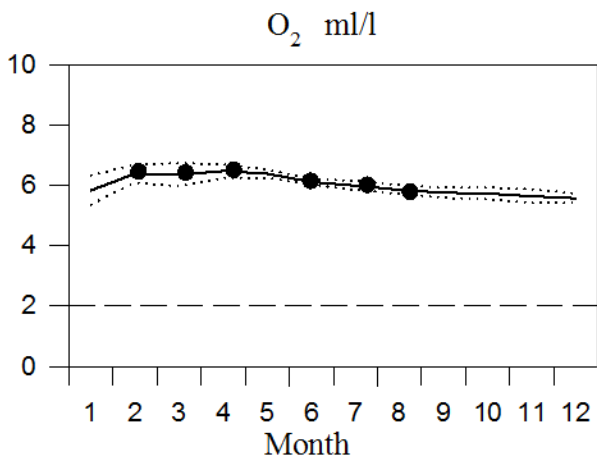
STATION Å17 SURFACE WATER

Annual Cycles

— Mean 1996-2010 ····· St.Dev. ● 2015

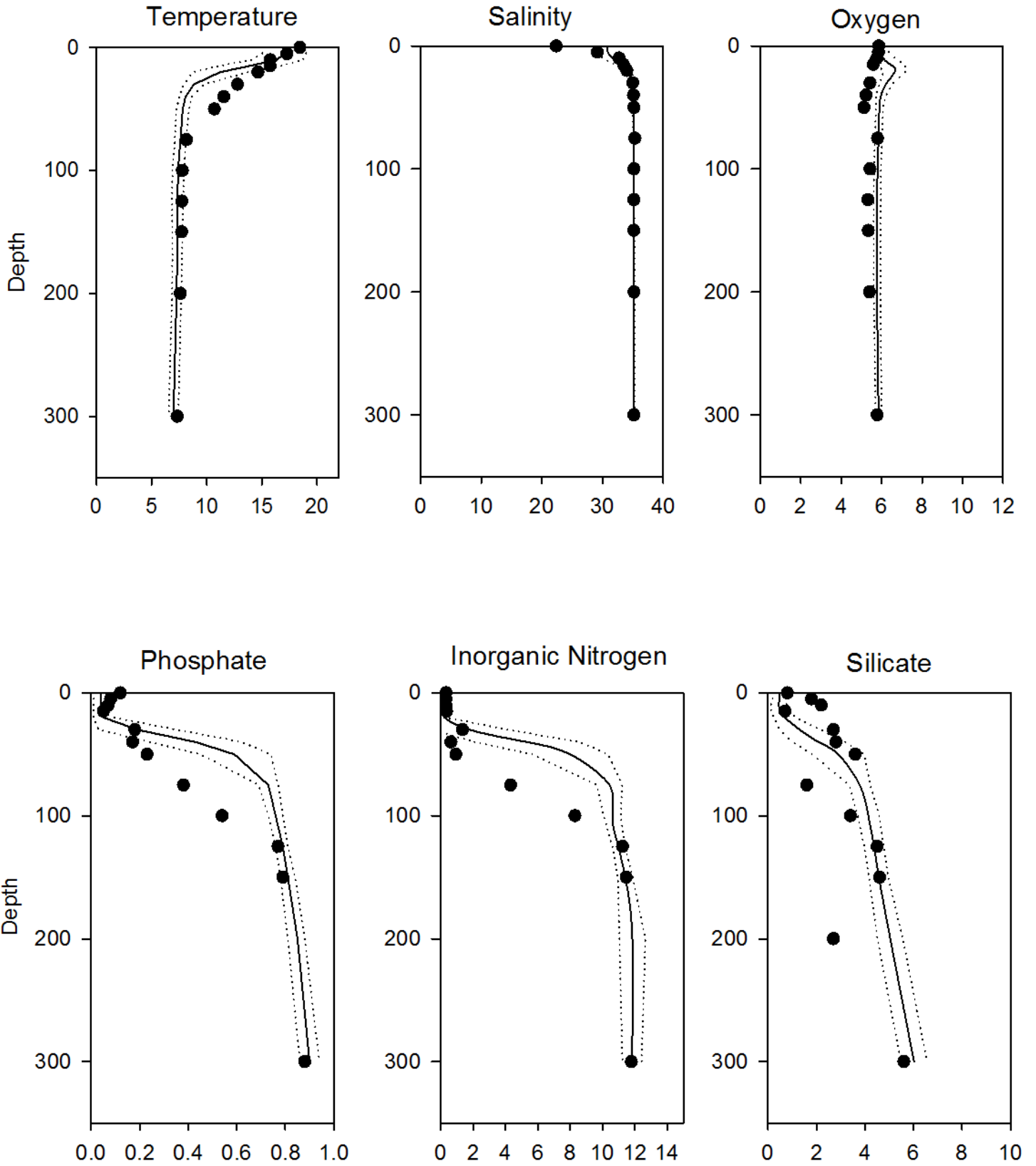


OXYGEN IN BOTTOM WATER (depth = 300m)



Vertical profiles Å17 August

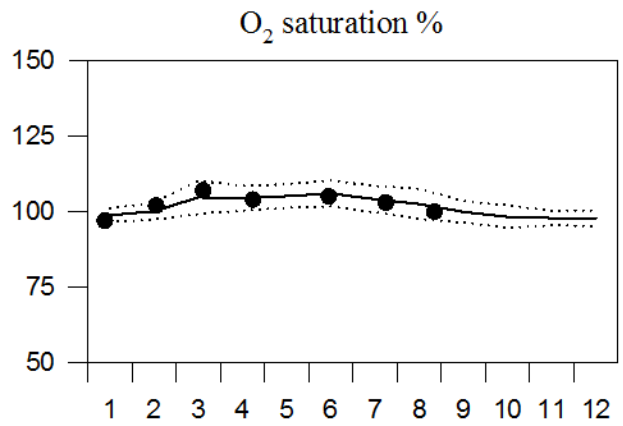
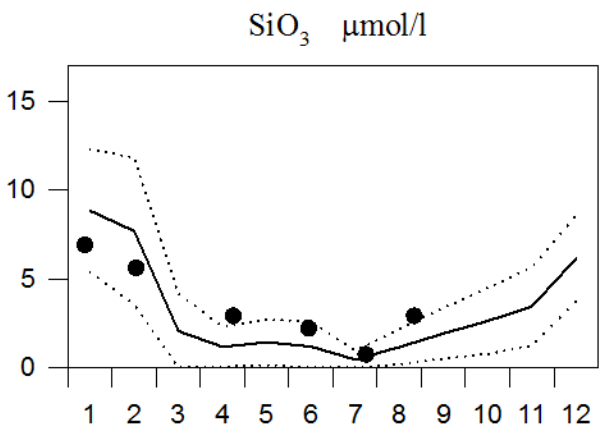
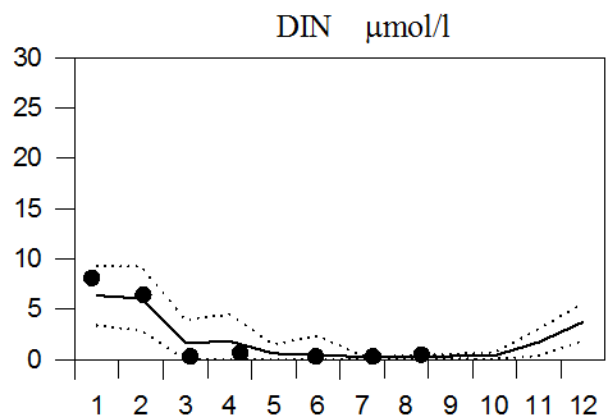
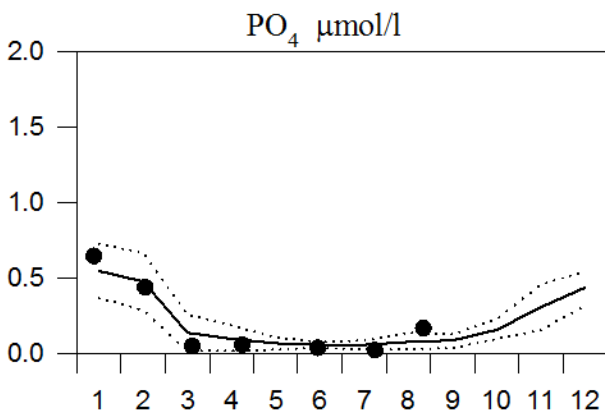
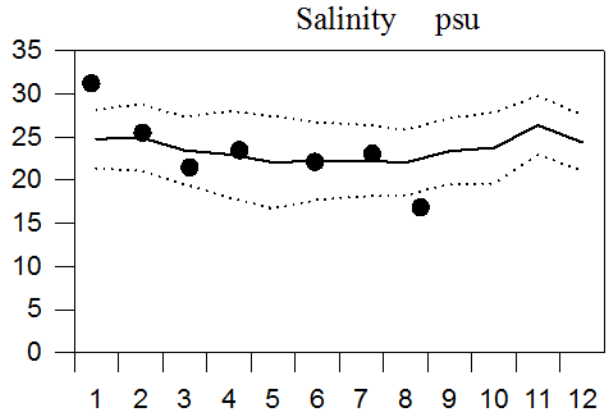
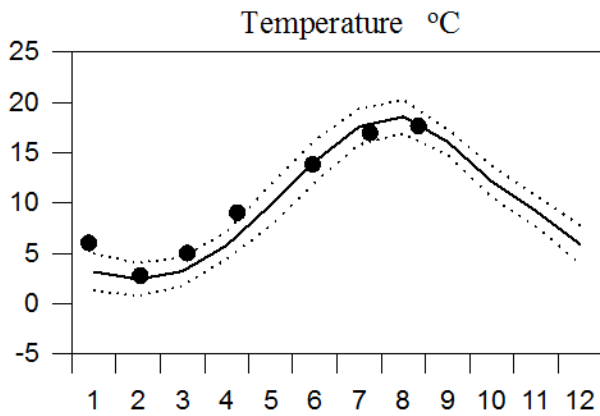
— Mean 1996-2010 St.Dev. ● 2015



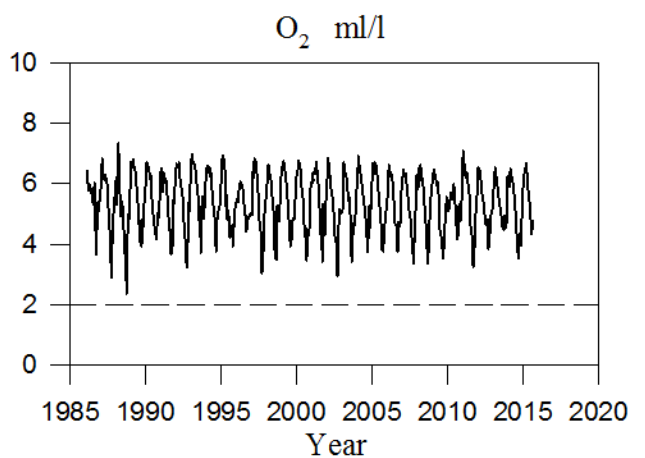
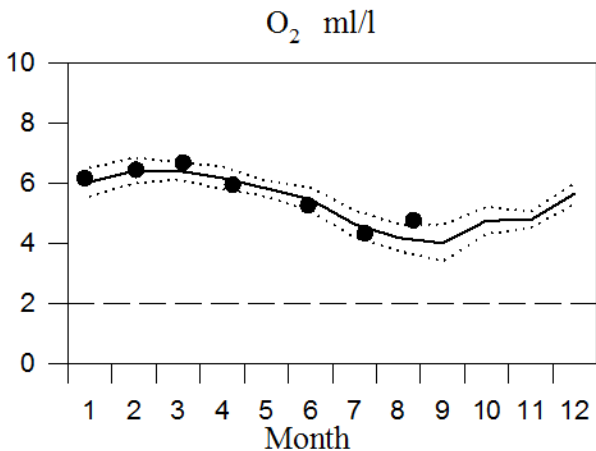
STATION FLADEN SURFACE WATER

Annual Cycles

— Mean 1996-2010 ····· St.Dev. ● 2015

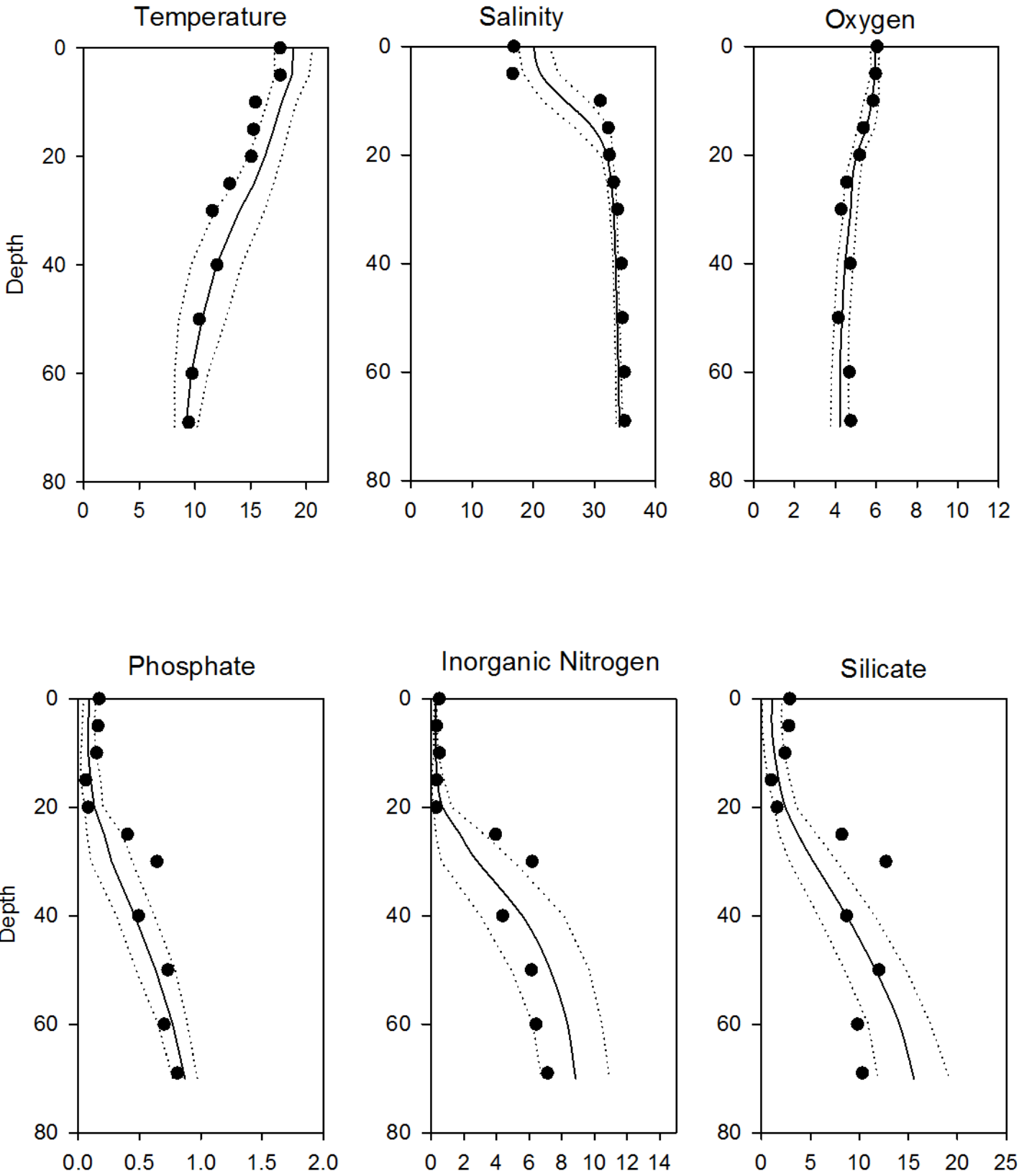


OXYGEN IN BOTTOM WATER (depth > 70m)



Vertical profiles Fladen August

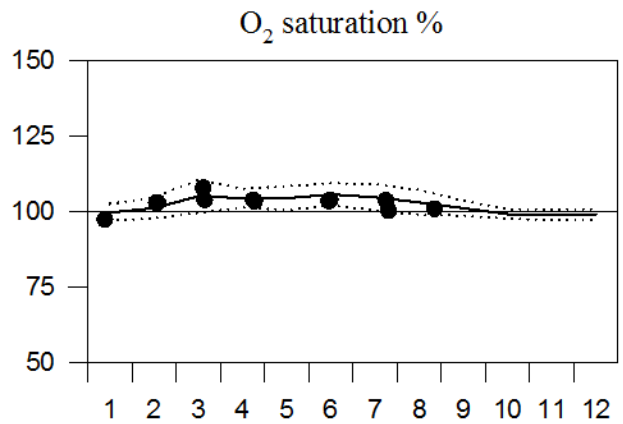
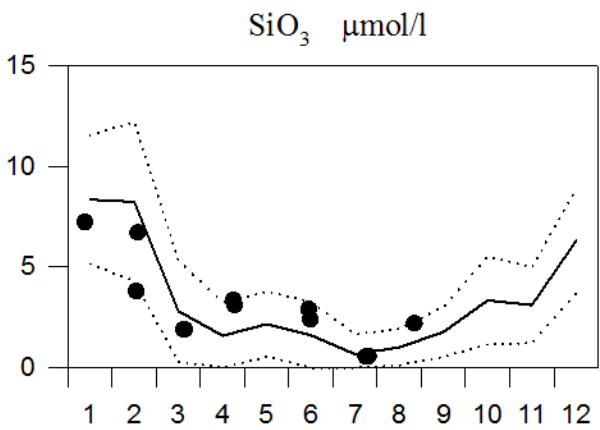
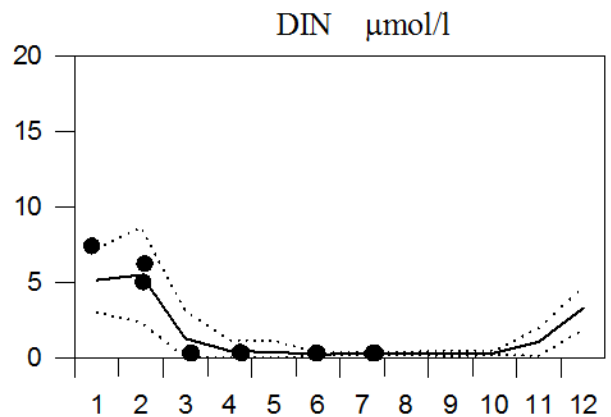
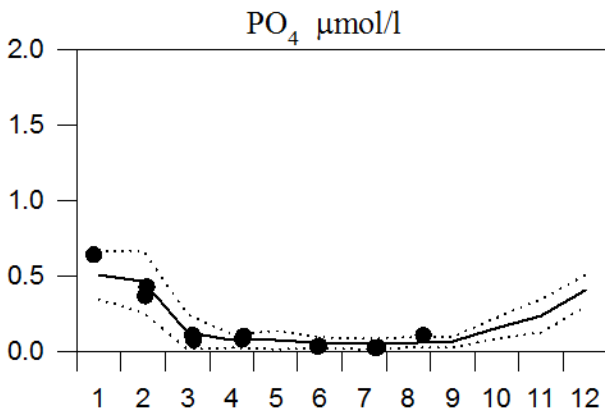
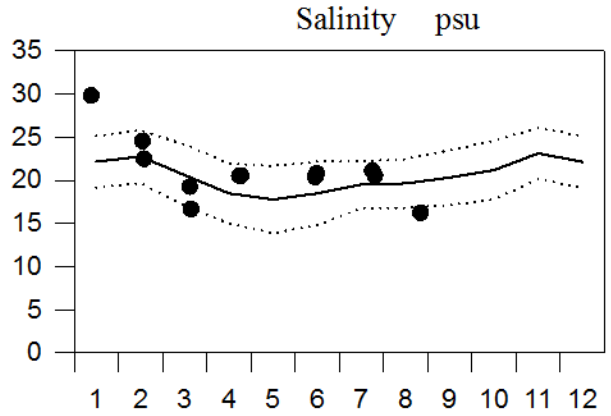
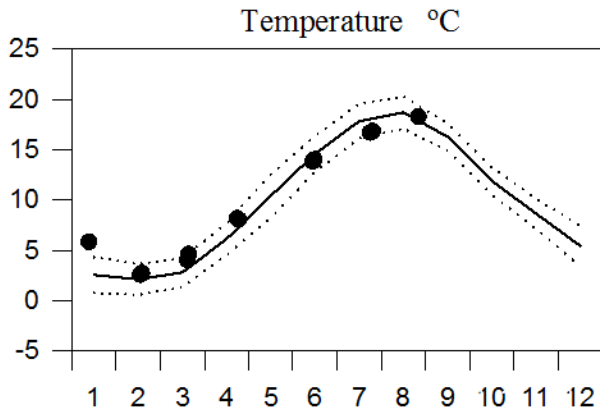
— Mean 1996-2010 St.Dev. ● 2015



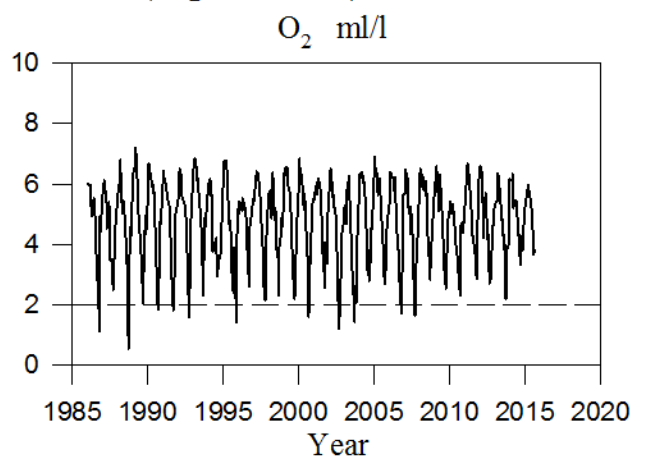
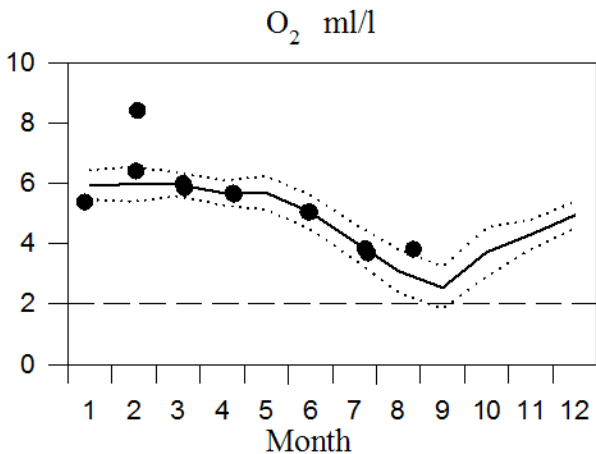
STATION ANHOLT E SURFACE WATER

Annual Cycles

— Mean 1996-2010 St.Dev. ● 2015

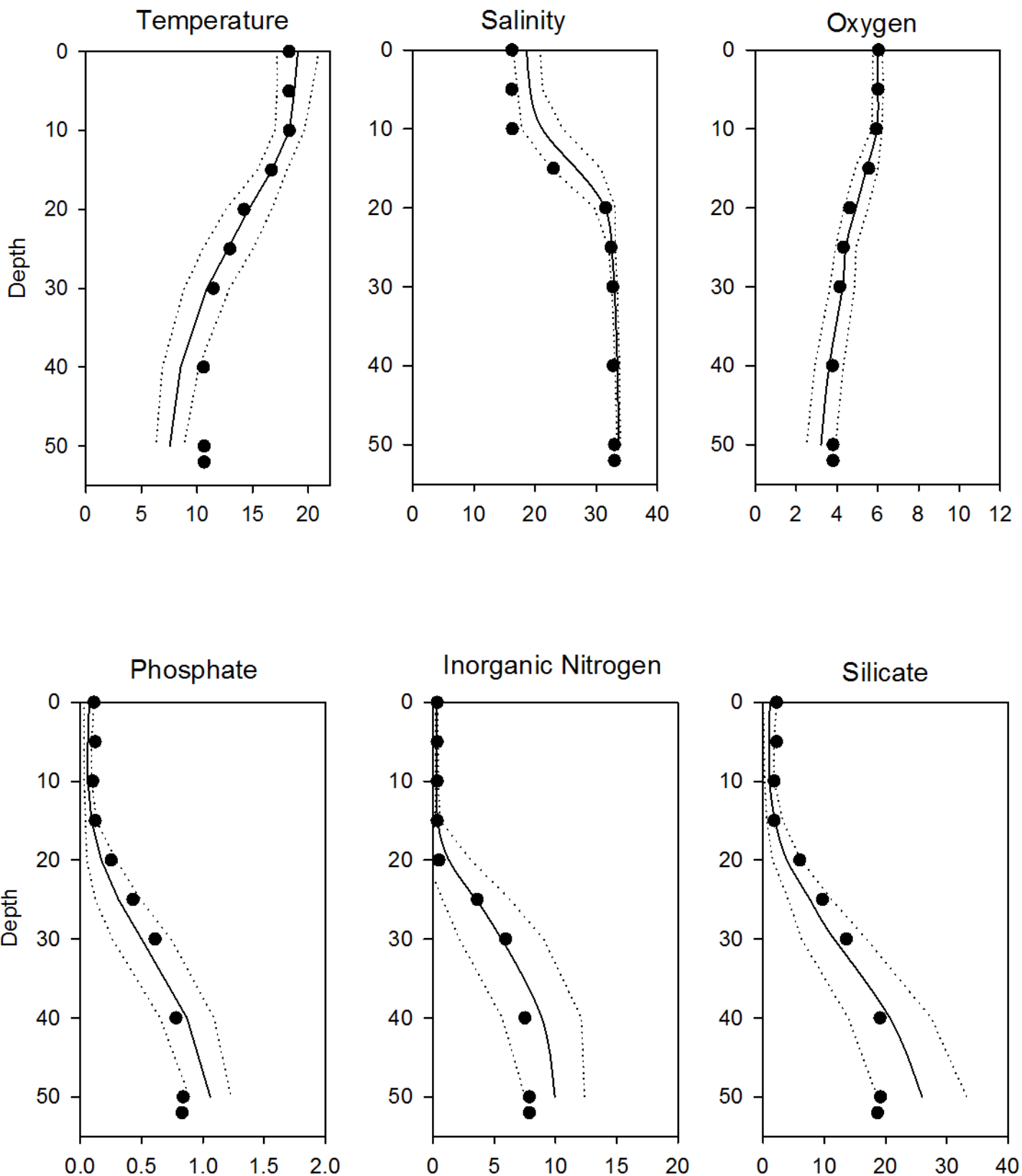


OXYGEN IN BOTTOM WATER (depth > 50m)



Vertical profiles Anholt E August

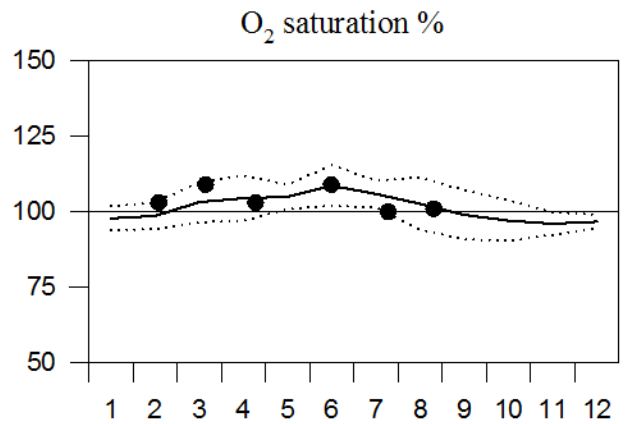
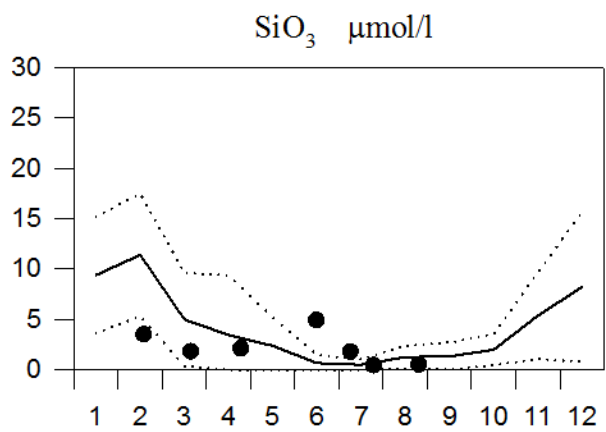
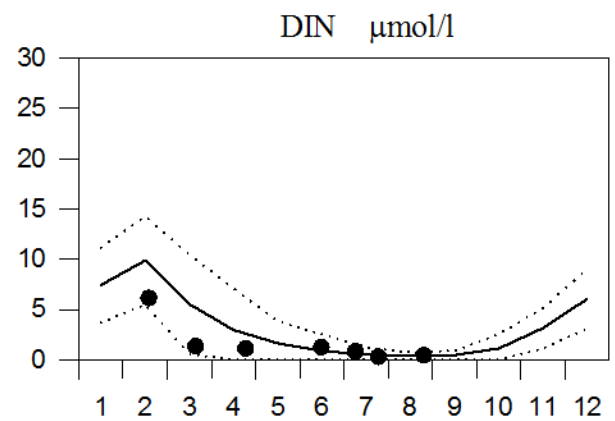
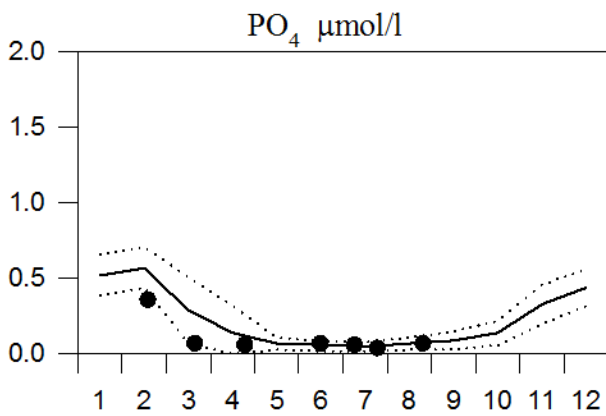
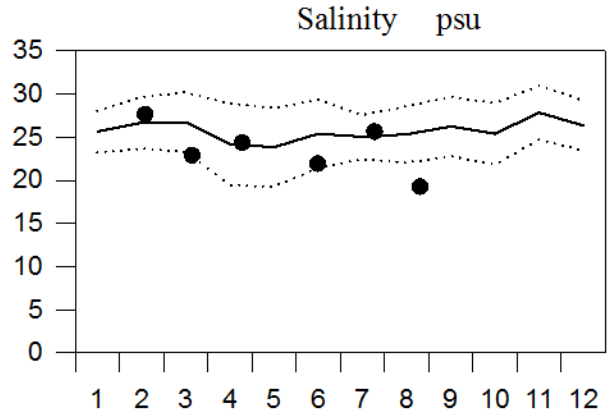
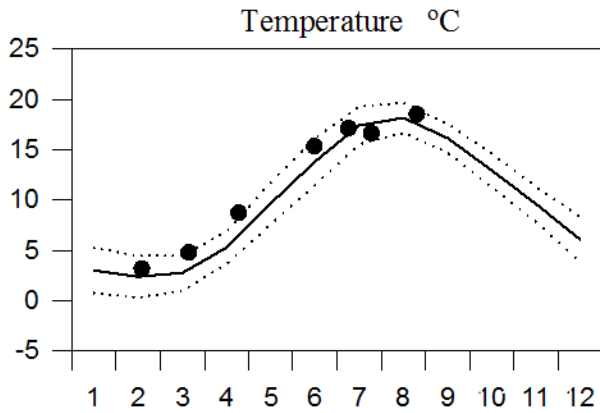
— Mean 1996-2010 St.Dev. ● 2015



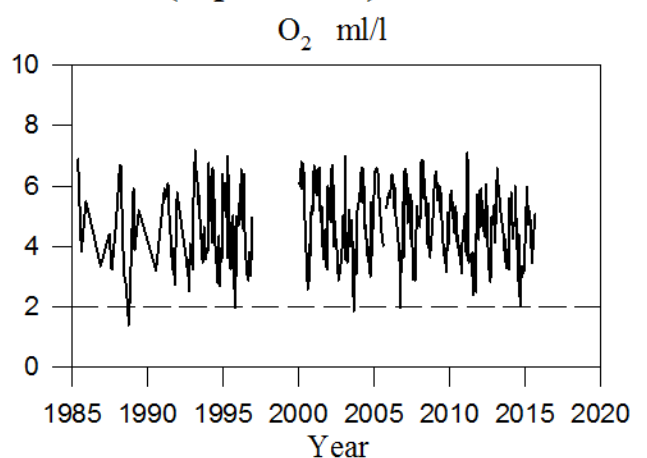
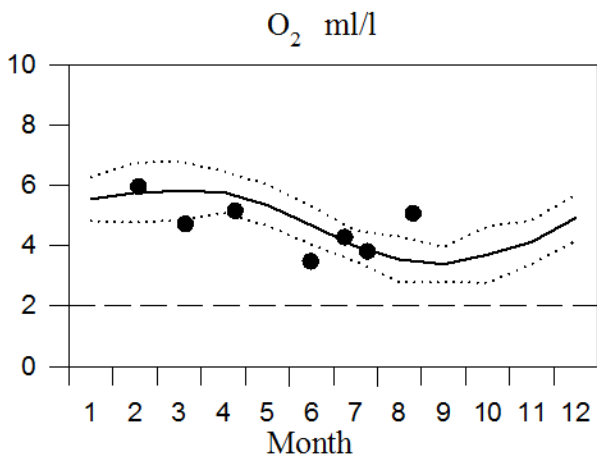
STATION SLÄGGÖ SURFACE WATER

Annual Cycles

— Mean 1996-2010 ····· St.Dev. ● 2015

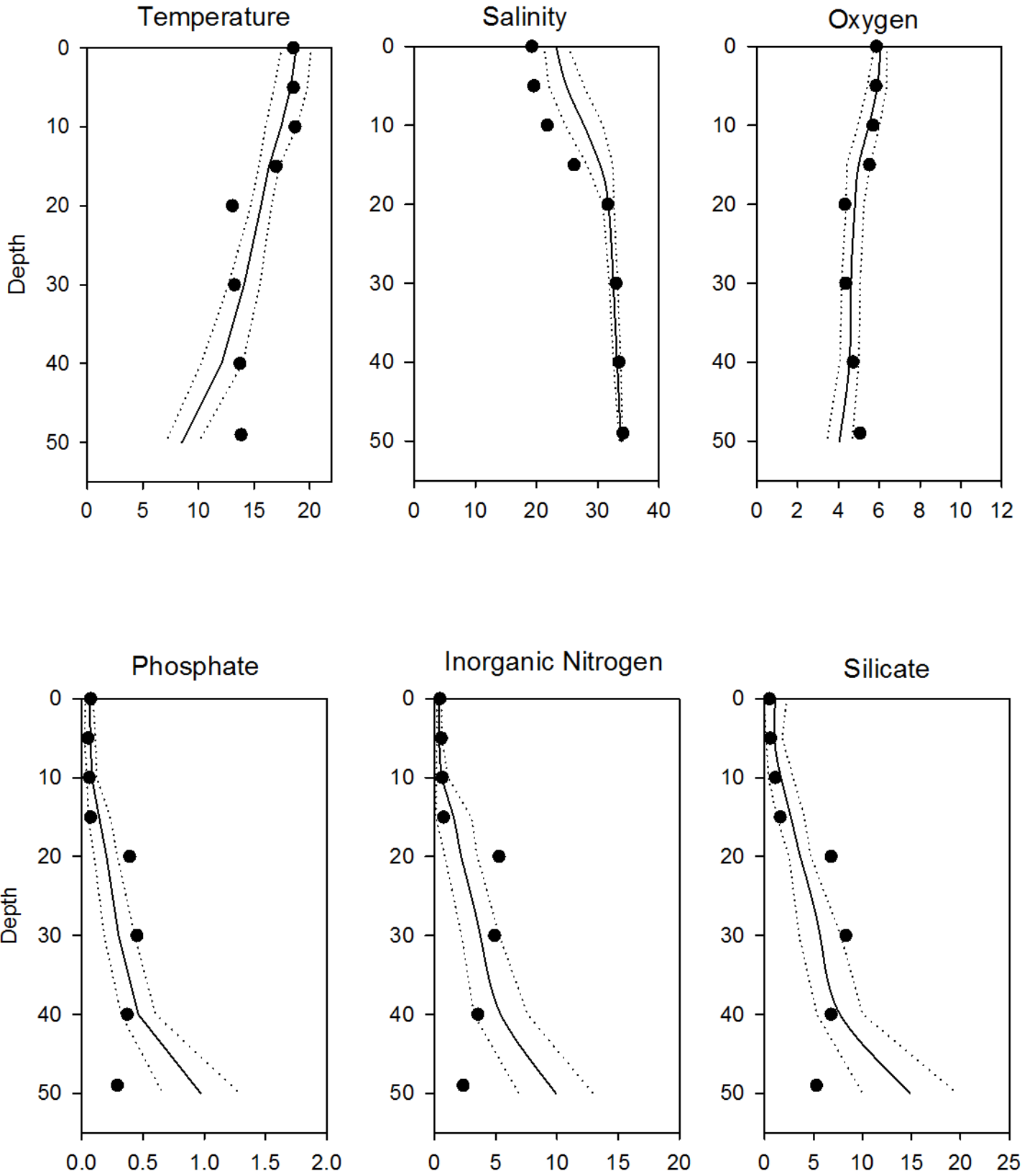


OXYGEN IN BOTTOM WATER (depth >50m)



Vertical profiles Släggö August

— Mean 1996-2010 St.Dev. ● 2015



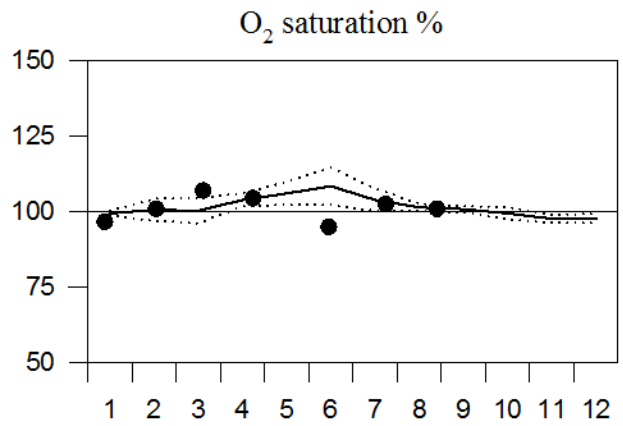
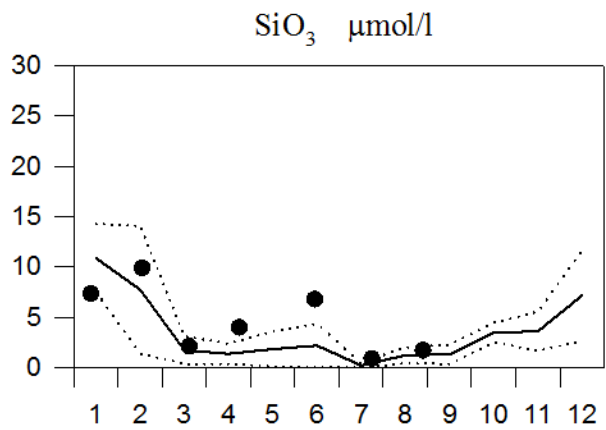
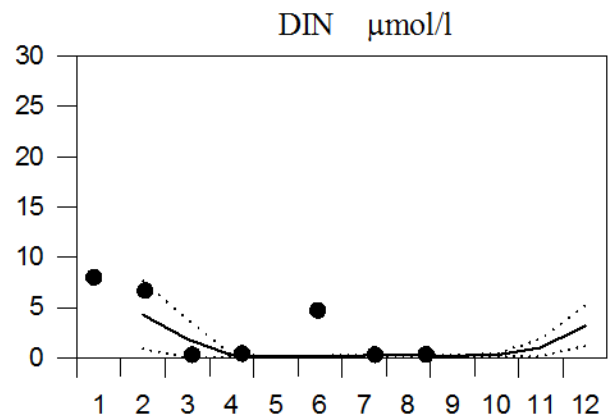
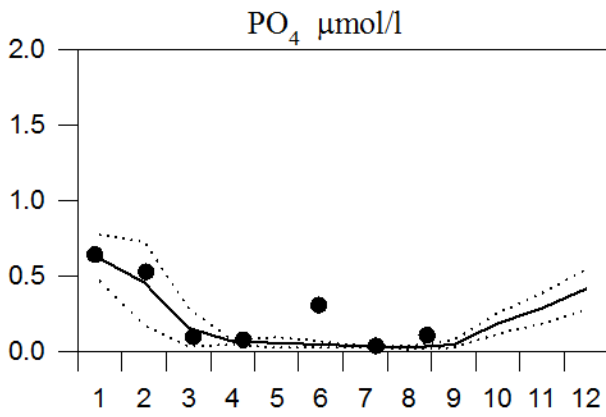
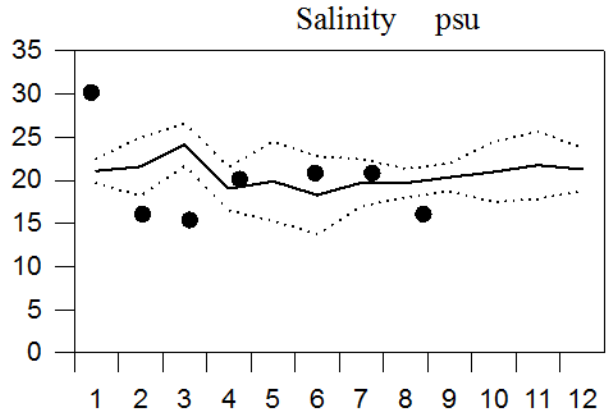
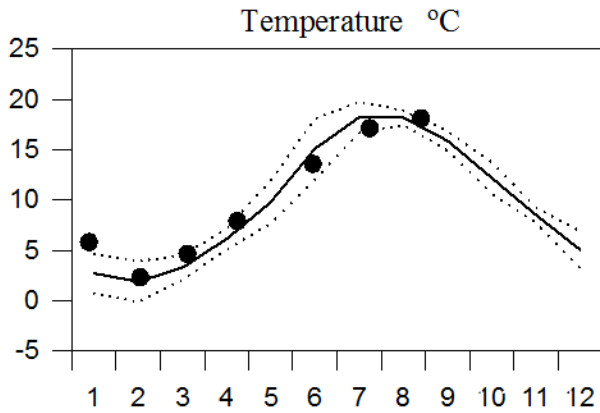
STATION N14 Falkenberg SURFACE WATER

Annual Cycles

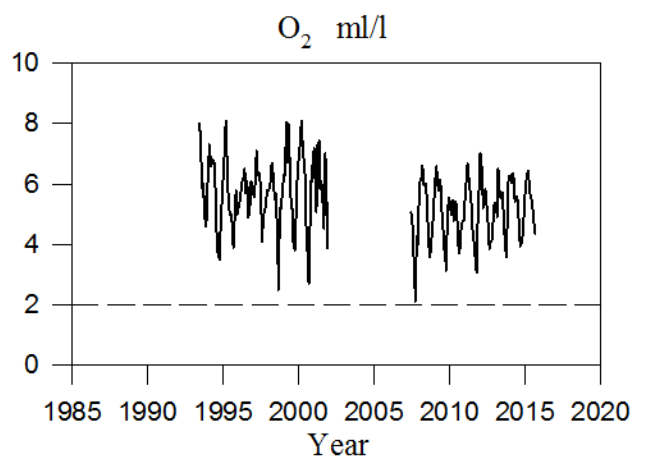
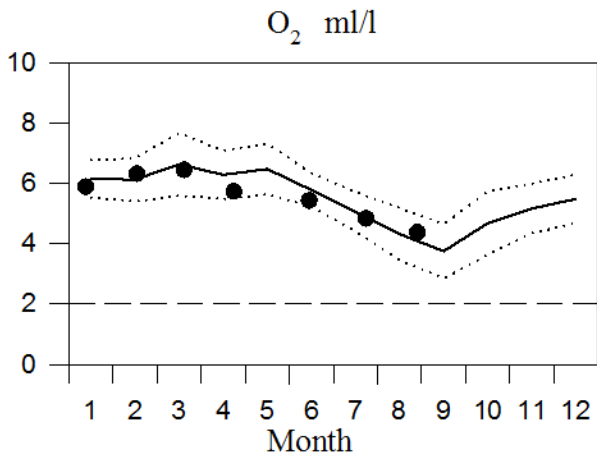
— Mean 2007-2010

..... St.Dev.

● 2015



OXYGEN IN BOTTOM WATER (depth > 25m)



Vertical profiles N14 Falkenberg August

— Mean 1996-2010 St.Dev. ● 2015

