
-4H- JENA engineering Monitoring systems

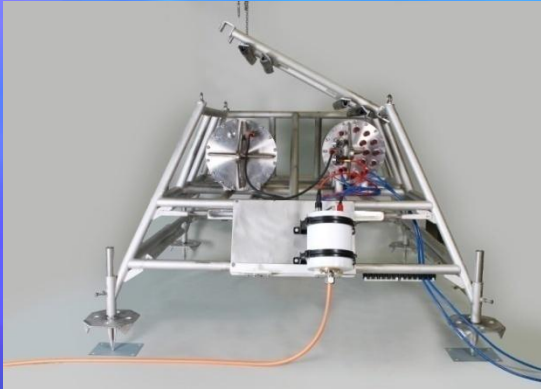
Tobias Boehme
-4H- JENA engineering GmbH

Helsinki 2013

Contents

- Company profile
 - Marine measuring techniques
- -4H- Ferrybox
 - Cleaning results
- Plankton, liter and passive sampler
- Measuring Containers
- Data from Ny Alesund
- Summary

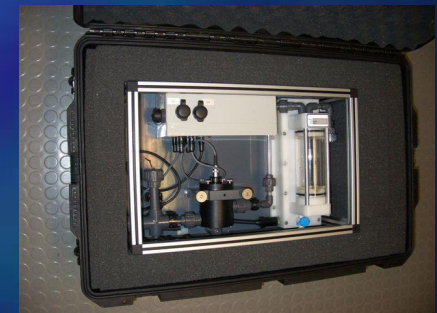
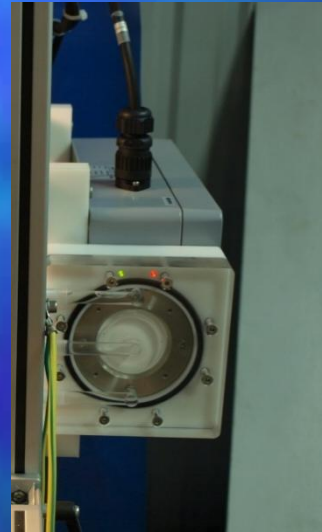
Marine techniques



-4H-FerryBox

- LabVIEW base software
 - Harbor controlled water system
 - Position , time and event controlled sampling
 - Error handling
 - Effective Antifouling routines
 - Remote controlled training and operation
 - Flexible in size and in the choice of the sensors, systems and analyzers
 - Implementation of external data as NMEA, Metrology and remote spectrometer
- The Customer configure his own system

-4H- MiniBox



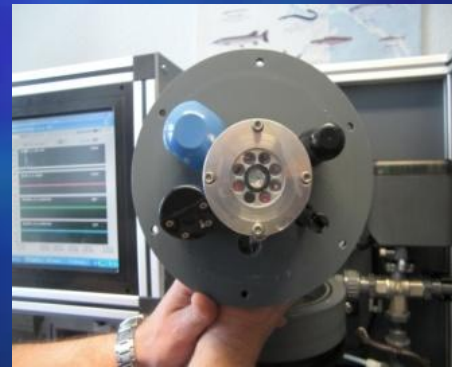
Weight: 10 kg, controlled by a laptop

(Photo.: ZMT)

-4H- Aquacontrol



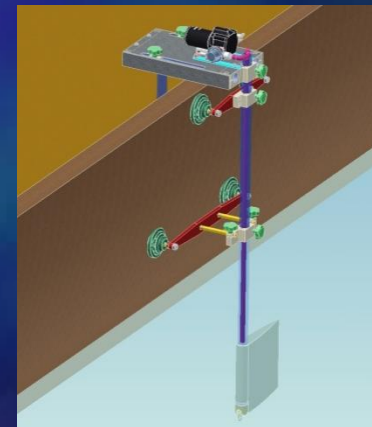
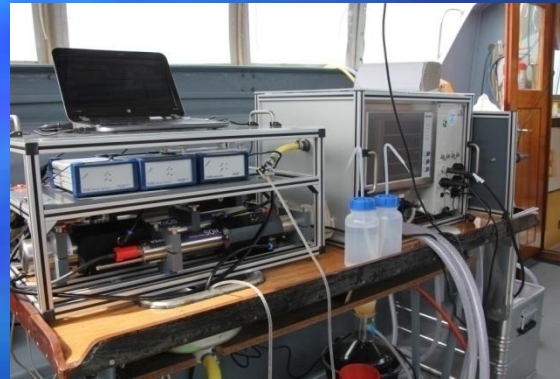
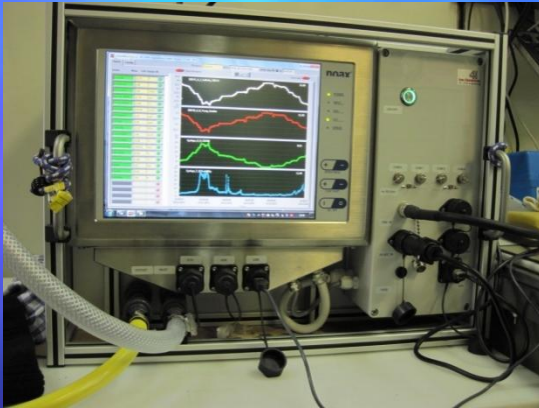
Standard 230V Plug,
threshold controlled



(Photo.: ZMT)

Monitoring and parameter control
of shrimps farms in Indonesia

-4H-PocketBox



Add-on: extra frame, debubbler, cleaning module

-4H- FerryBox II



RV Polarstern



Container vessel
Tor Hafnia?



RV MYA II

The Customer configure his own system

-4H- FerryBox I



Ferry Amorique



Ferry Olympic Champion



Cleaning results at the -4H-Ferrybox on the Endeavour after one year

Seapoint Chl-a



Phytoflash



SBE 45



-4H- Measuring Containers



HZG Cuxhaven



Petrobras

24 Parameter: S, C, T, Chl a, pH, Turbidity, Algeaclasses, Methan, pCO₂, 6 X Fluorecence, 6 X Benzole, external T

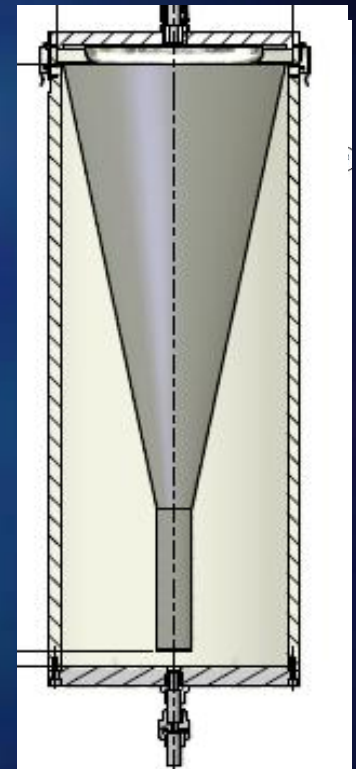
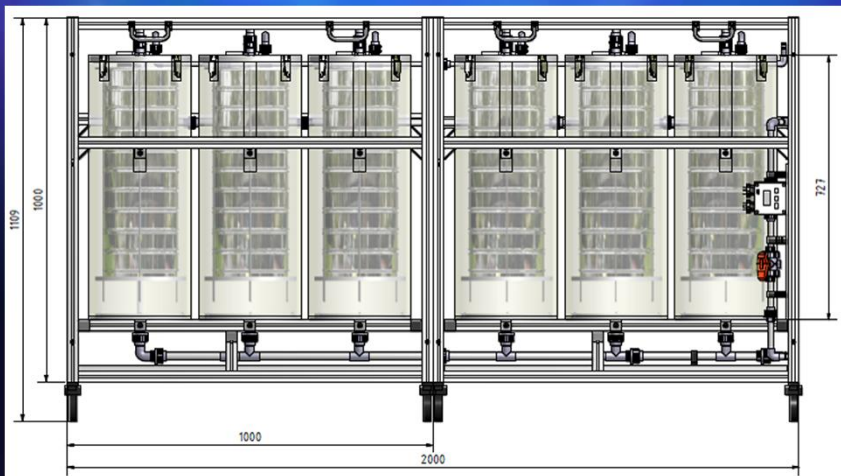
passive sampler for -4H- FerryBox

- Water quality monitoring
- Position and time controlled sampling



Plankton and litter sampler

- Water quality monitoring
- Position and time controlled sampling
- Autonomous sampling with the perspective of the Water Framework Directive



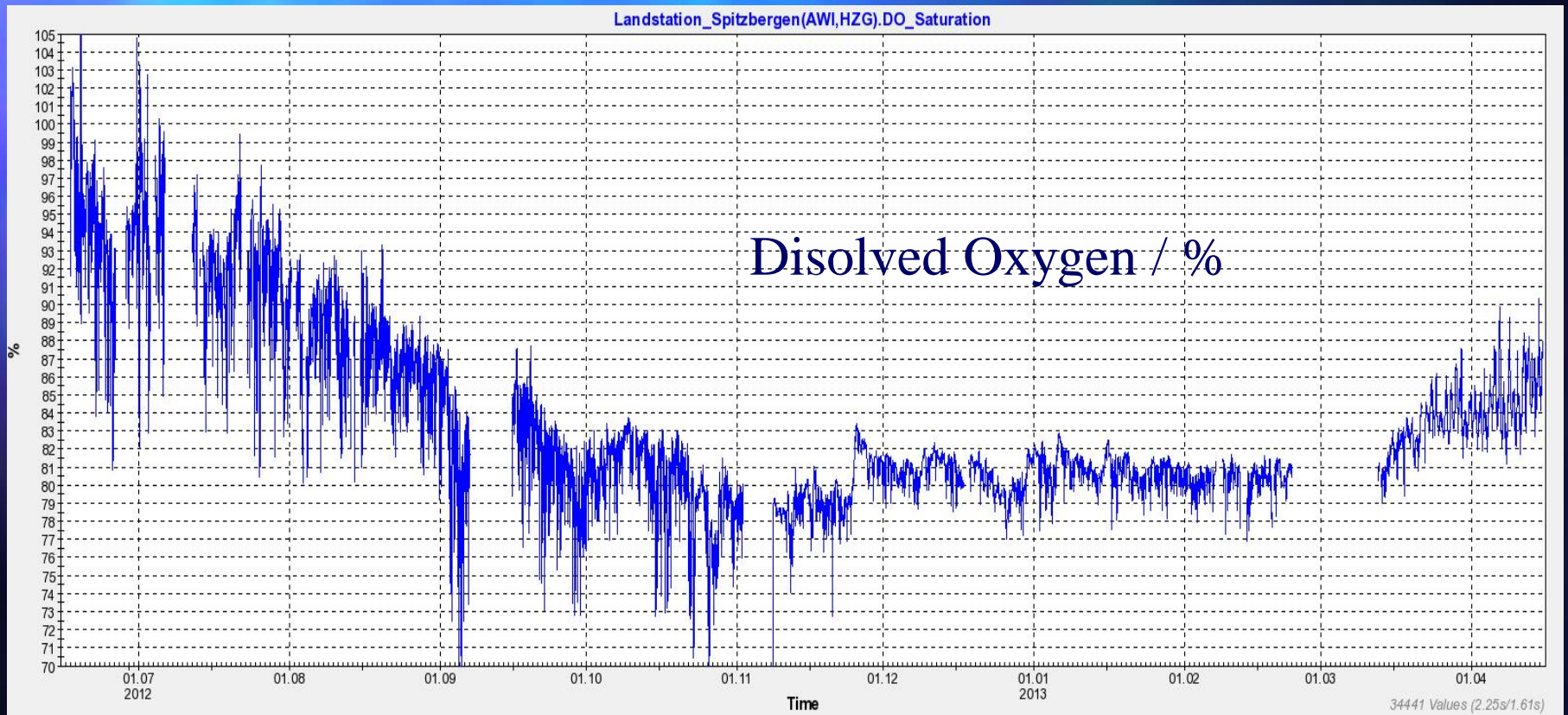
Installation at Ny Alesund



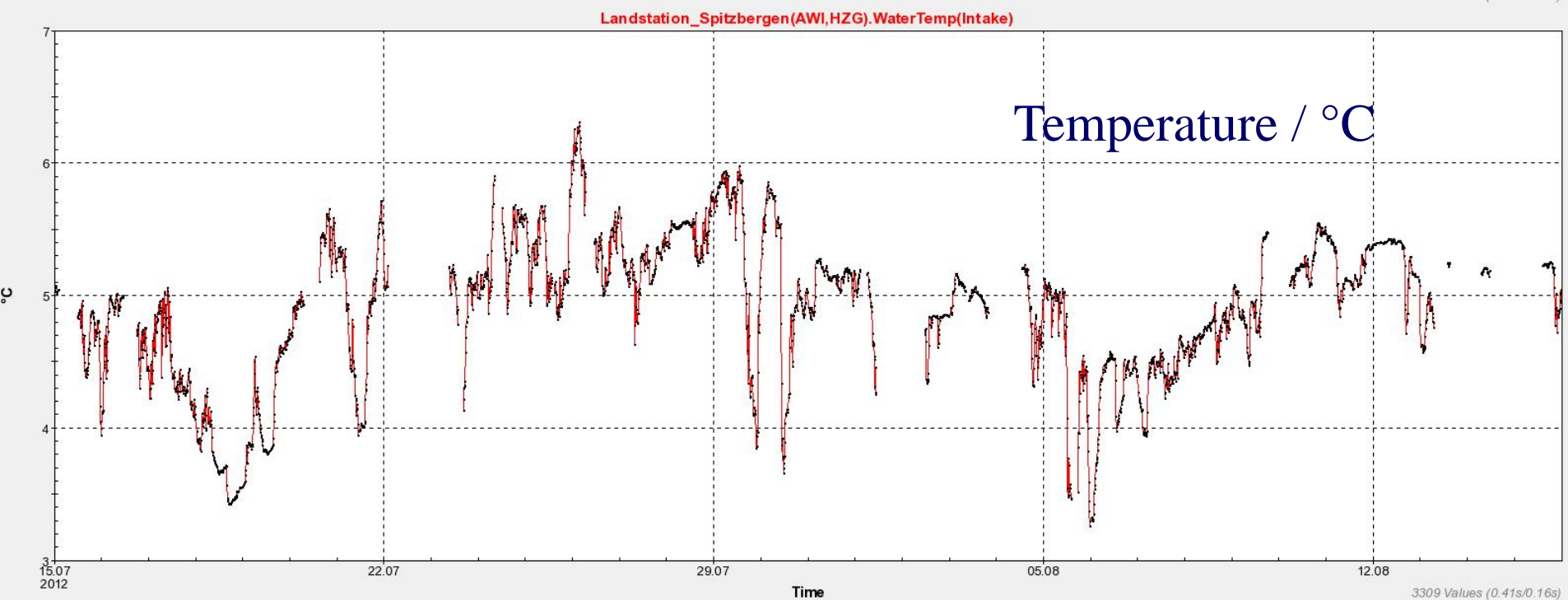
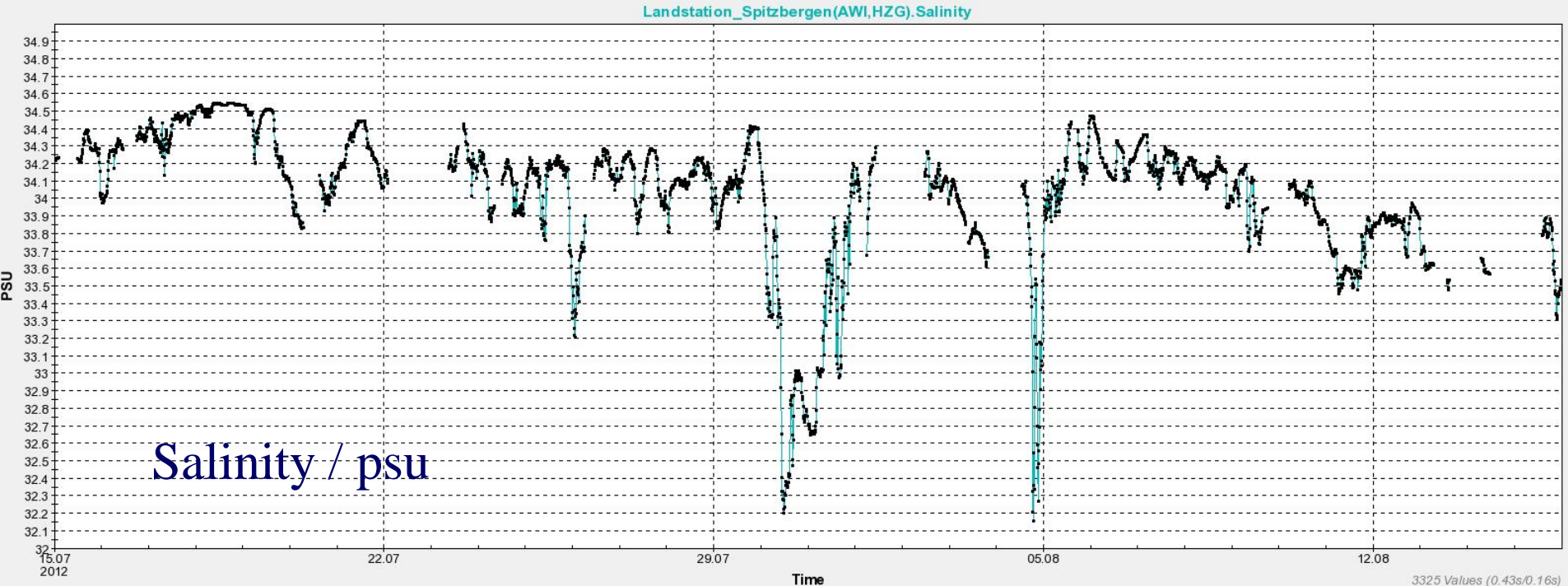
In cooperation with HZG, AWI, COSYNA

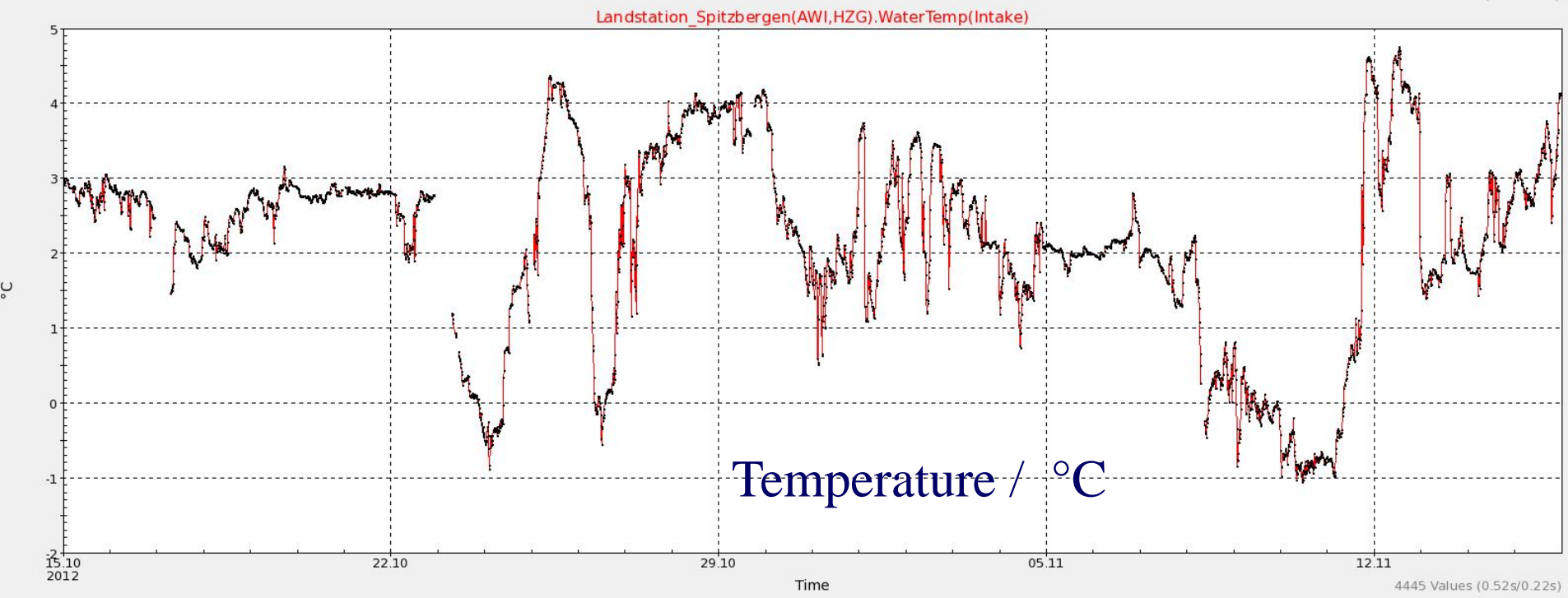
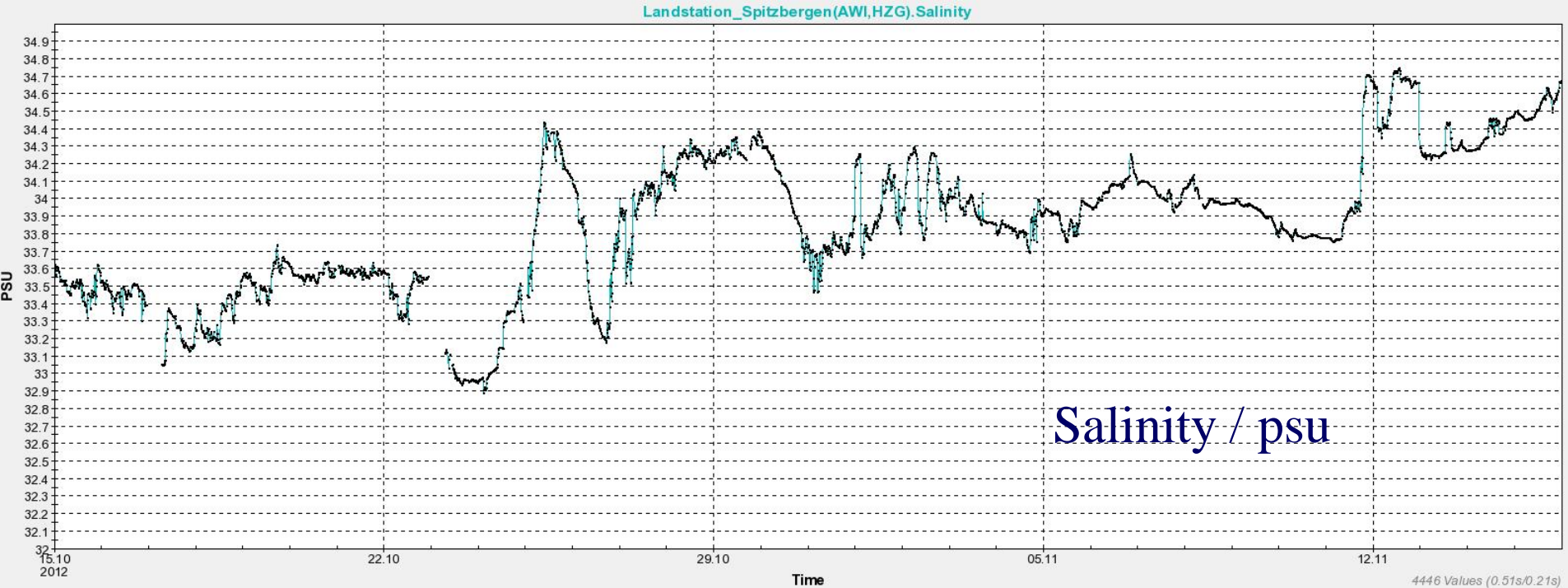
Ny Alesund

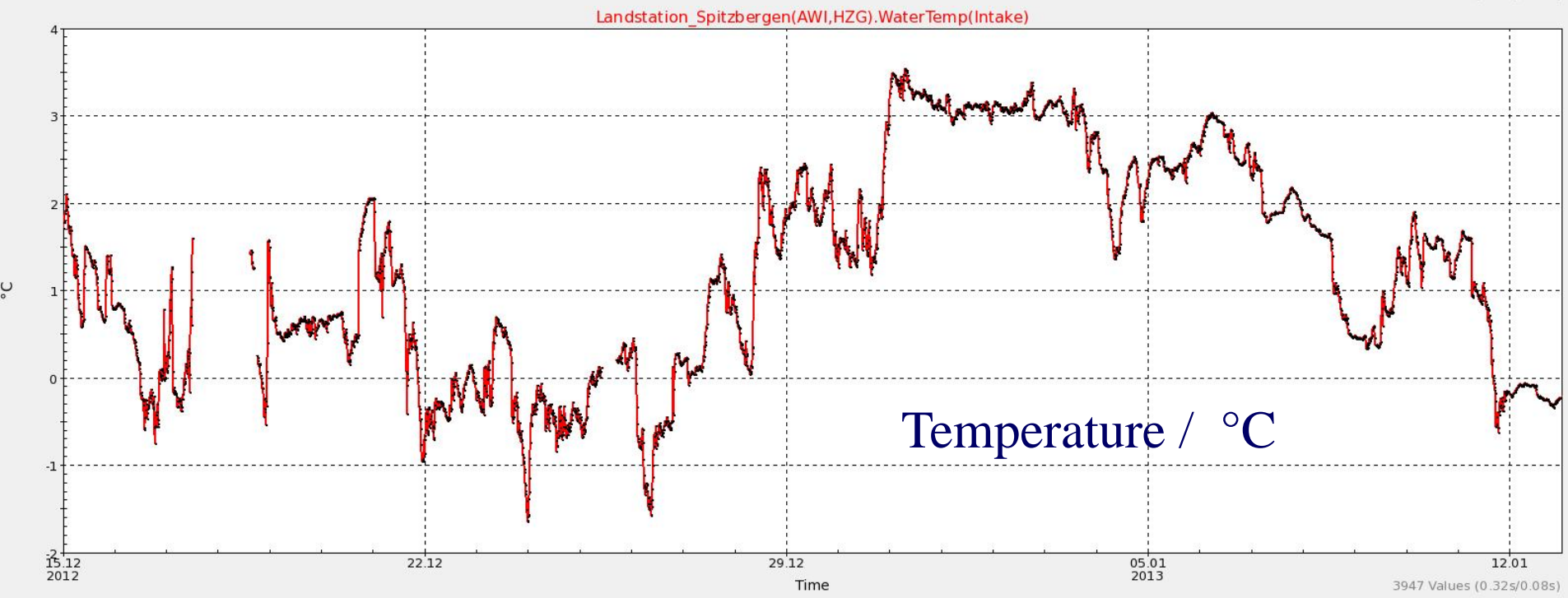
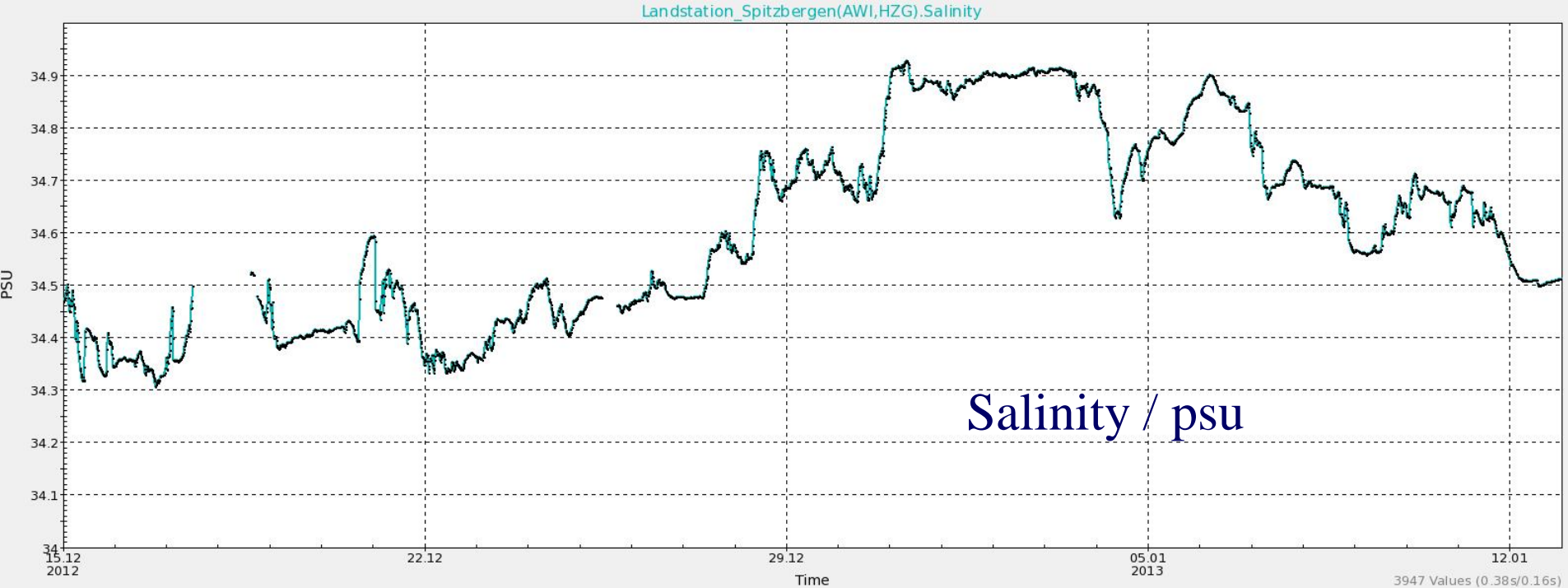
15th of June 2012 till 16th of April 2013



<http://tsdata.hzg.de>







Summary

- The 4H-Monitoring Systems provide solutions to most of the problems associated with long-term in-situ monitoring of rivers, estuaries, coastal zones and open sea.
- The modular systems combines high flexibility in the choice of sensor-types and the possibility for automatic and remote-controlled operation.

Thank you very much
for your attention

