

## Project information

### Project title

Long-term variability and trends in the Atlantic Water inflow region (A-TWAIN)

### Year

2013/2014

### Project leader

Vladimir Pavlov, NPI

### Participants

- Project leader: Vladimir Pavlov/Norwegian Polar Institute and Randi Ingvaldsen/Institute of Marine Research
- Project participants: Randi Ingvaldsen/Institute of Marine Research, Frank Nilsen/The University Centre in Svalbard, Marit Reigstad/Univ. of Tromsø, Arild Sundfjord/Norwegian Polar Institute
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### Flagship

Arctic ocean, Theme: Sea ice, ecosystems and models

### Funding Source

Fram Centre

### Summary of Results

Instruments for mooring station were purchased.

A-TWAIN Lance cruise 13 September to 01. October was carried out.

8 mooring stations were recovered, including 4 from WHOI (USA) and 2 from IOPAS (Poland)

1 mooring at 500 m was lost.

4 mooring stations were deployed (including 1 from IOPAS (Poland))

167 CTD/LADCP stations and 26 stations with biological and chemical samples (in cooperation with flagship Ocean Acidification) were performed.

### For the Management

During these years we have established new representative site for long-term monitoring of the warm Atlantic Waters north of Svalbard.

Based on the data obtained from the mooring stations in 2013 we will get the seasonal changes of the of the so important parameters like water temperature, salinity, currents, heat and salt fluxes of the Atlantic water to the Arctic Ocean.

Obtained data will be very useful for making decisions about future human activities, e.g. fishing oil-gas exploration and navigation in the area north of Svalbard.

### Published Results/Planned Publications

1. Cruise report, Lance A-TWAIN cruise, 13 September-01 October 2013.
2. Poster presentation at the FAMOS Workshop, 21-25 October 2013, Woods Hole Oceanography Institution, USA. A. Sundfjord, A. Renner, A. Randelhoff, V. Pavlov, S. Hudson, M. Granskog (2013). Upper-ocean vertical fluxes in the Atlantic Water inflow region North of Svalbard.

### Communicated Results

Outreach participants from WHOI institution have prepared website about work in Lance A-TWAIN cruise:  
[www.whoiedu/warmingarctic](http://www.whoiedu/warmingarctic)

Poster presentation at FAMOS workshop, WHOI, USA, Oct 2013.

### Interdisciplinary Cooperation

Good practical cooperation between scientists from physical oceanography, marine biology, carbon chemistry in planning and execution of cruise.

Budget in accordance to results

From the Fram Polhavet funding :

- The necessary instrumentations were purchased
- A-TWAIN Lance cruise, 13 September-01 October 2013

Could results from the project be subject for any commercial utilization

No

Conclusions

In 2013 8 mooring stations for monitoring of Atlantic Water inflow to the north of Svalbard were recovered and 4 of them redeployed again.

- There are 3 FRAM moorings and 1 Polish mooring.
- In 2014 we are planning to recover and re-deploy 3 FRAM and 1 Polish mooring station.
- The data will be analyzed and published. Data will also be made publicly available through open access data bases.