

## **Report – field campaign spring 2009 - climatology team**

**(May 10<sup>th</sup> – May 29<sup>th</sup>)**

### **Participants on the spring 2009 field campaign:**

- Roman Finkelburg, TU Berlin
- Marco Möller, RWTH Aachen University
- Tobias Sauter, RWTH Aachen University
- Dieter Scherer, TU Berlin

### **Logistic support:**

- Lasse Tano, Swedish Polar Research Secretariat
- Åke Wallin, Swedish Polar Research Secretariat

### **Associated colleagues:**

- Matthias Braun, ZFL, University of Bonn
- Regine Hock, Geophysical Institute, University of Alaska, Fairbanks
- Christoph Schneider, RWTH Aachen University

### **Objectives:**

- Investigation of mass and energy balance of Vestfonna and De Geerfonna
- Meteorological measurements
- Assessment of spatial variability in local and regional climate setting
- Documentation and analysis of snow stratigraphy
- Obtainment of ground truth data for DTM generation
- Preparation for future assessment of ice dynamic information

### **Conducted fieldwork:**

- Gathering data from six automatic weather station (Kinnvika research station; De Geerfonna ~240 m asl; NW ramp of Vestfonna ~240, ~370 and ~500 m asl; Ahlmann Summit (Vestfonna) ~600 m asl)
- Dismounting of two full energy balance automatic weather stations at the NW ramp of Vestfonna (~240 and ~500 m asl)
- Dismounting of one automatic weather station on Ahlmann Summit (Vestfonna, ~600 m

asl)

- Fixing and maintaining of two full energy balance automatic weather stations at the NW ramp of Vestfonna (~370 m asl) and Kinnvika research station
- Fixing and maintaining of one automatic weather station on De Geerfonna (~240 m asl)
- Metering and maintaining of ablation stake networks on Vestfonna and De Geerfonna
- Digging of a snow pit at the AWS site on De Geerfonna (Temperature, snow density, grain size and grain type, snow stratigraphy) and collection of snow samples for chemical analysis
- Differential GPS measurements at four ablation stakes on Vestfonna

### **Preliminary results:**

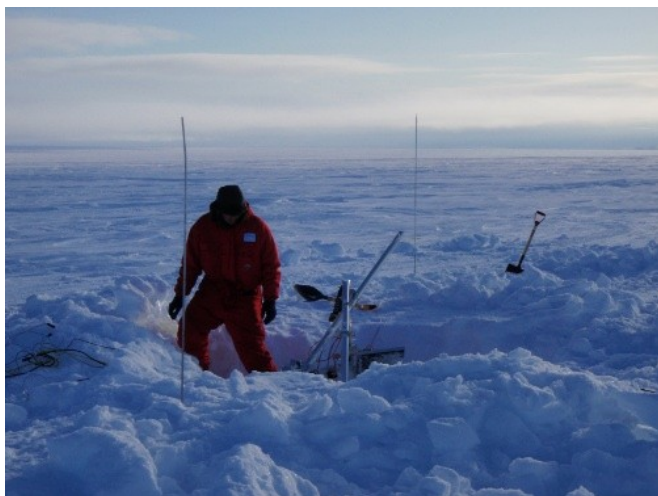
- Snow depth changes on Vestfonna since summer 2009 ranges between -30 and +130 cm; on Ahlmann summit snow depth change between May 2008 and May 2009 was ~240 cm (results are biased throughout lower glacier areas due to strong wind drift and appearance of bare glacier ice)
- Snow depth changes on De Geerfonna since summer 2009 are strongly positive (~40 cm)
- Formation of strong superimposed ice layer at elevations around the ELA (>20 cm)

### **LOG of activities:**

<b>Date</b>	<b>Workings</b>	<b>Weather</b>	<b>Site</b>
10.05.09	Arrival in LYR	Cloudy	LYR
11.05.09	Preparing field campaign	Cloudy, windy, light snow	LYR
12.05.09	Preparing field campaign; meeting Ken Peddersen (NP)	Cloudy, some sunny moments	LYR
13.05.09	1 <sup>st</sup> flight (Roman, Marco to Kinnvika; Bob, Dennis to LYR); gathering data from AWS in Kinnvika	Cloudy, windy, got better in the afternoon(LYR); best weather (Kinnvika)	LYR/Kinnvika
14.05.09	2 <sup>nd</sup> flight (Mariusz, Dariusz to Kinnvika); Maintaining/fixing AWS in Kinnvika; preparing trip to Vestfonna	Good weather, cloudy in the evening (Kinnvika)	LYR/Kinnvika

15.05.09	Maintaining/fixing AWS in Kinnvika; preparing trip to Vestfonna; Skidoo exploration trip to Wieslob (Veijo, Åke, Mariusz, Dariusz, Marco); Maintaining/fixing AWS in Kinnvika; preparing trip to Vestfonna	Cloudy (Kinnvika)	LYR/Kinnvika
16.05.09	3 <sup>rd</sup> flight (Dieter, Tobias, Lasse to Kinnvika; Emilie, Veijo, Rickard to LYR); preparing trip to Vestfonna	Good weather, cloudy and windy in the afternoon (Kinnvika)	LYR/Kinnvika
17.05.09	Preparing trip to Vestfonna; Trip to Ahlmann Summit at night	Cloudy, windy, light snow, some sun in the evening	Kinnvika
18.05.09	Digging out AWS2; gathering data; dismounting AWS2; reading ablation stakes; digging snow pit	Cloudy, windy, good weather in the afternoon, light snow	Ahlmann Summit
19.05.09	Dismounting Camp; trip to NW ramp of Vestfonna (~370 m asl); setting up camp; gathering data from ECS2; maintaining/fixing ECS2	Cloudy, windy, light snow	Ahlmann Summit/NW ramp (Vestfonna)
20.05.09	Gathering data from ECS1 + ECS3; dismounting ECS1 + ECS3; maintaining/fixing ECS2; reading ablation stakes; trip to Franklinbreen	Sunny, cloudy in the evening	NW ramp (Vestfonna)
21.05.09	Dismounting ECS1 + ECS3; maintaining/fixing ECS2	Cloudy, light wind	NW ramp (Vestfonna)
22.05.09	Dismounting ECS1 + ECS3; maintaining/fixing ECS2	Cloudy, light wind	NW ramp (Vestfonna)
23.05.09	Dismounting camp; trip to De Geerfonna; gathering data from AWS1; maintaining/fixing AWS1; reading ablation stakes; digging snow pit; trip to Kinnvika	Cloudy, light wind, sunny in the afternoon, stormy at night	NW ramp (Vestfonna)/De Geerfonna/Kinnvika
24.05.09	Recovering (sleeping, etc.); cleaning up Kinnvika station	Cloudy, windy	Kinnvika
25.05.09	1 <sup>st</sup> flight to LYR (Marco, Dieter, Dariusz, Mariusz); cleaning up Kinnvika station	Good weather, decreasing in the evening (Kinnvika)	Kinnvika/LYR
26.05.09	2 <sup>nd</sup> flight to LYR (Roman, Tobias, Åke, Lasse); cleaning up Kinnvika station	Snow storm (Kinnvika)	Kinnvika/LYR
27.05.09	Recovering (sleeping, etc.)	Cloudy, light wind	LYR
28.05.09	Recovering (sleeping, etc.)	Good weather	LYR
29.05.09	Departure from LYR	Cloudy	LYR

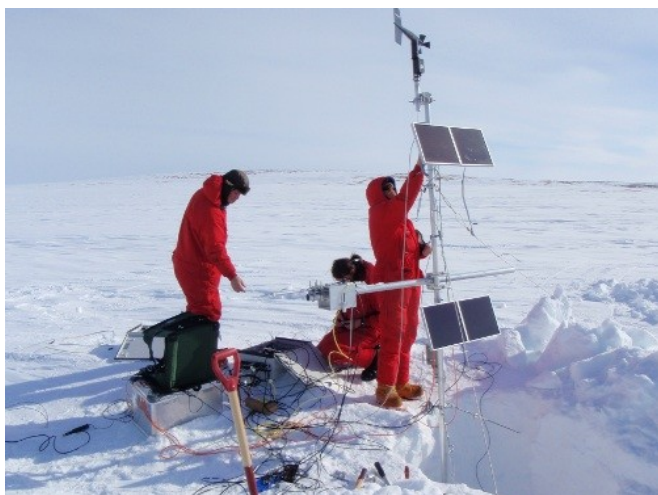
**Photos:**



*Digging out the broken summit station  
(Roman Finkelburg)*



*Gathering data from station at the NW ramp  
(Tobias Sauter)*



*Maintaining station at De Geerfonna (Roman  
Finkelburg, Tobias Sauter, Marco Möller)*



*Picking ice to win back sensor cables (Dieter  
Scherer)*



*Social gathering at NW ramp camp (Roman Finkelnburg, Tobias Sauter, Mariusz Grabiec)*



*(Mariusz Grabiec, Dariusz Puczko)*



*(Åke Wallin, Marco Möller, Lasse Tano)*



*(Marco Möller, Dieter Scherer)*