

## ASP PROJECT SUMMARY

Name of all actual participants listed by institution	AU: Magnus Lund, Kirstine Skov, Torben R. Christensen, Laura H. Rasmussen, Lau G. Petersen, Line V. Hansen, Mikhail Mastepanov UoM: GINR: Other : Maria R. Mylius (University of Copenhagen), Marcin Jackowicz-Korczynski (Lund University)
Actual field work start / end dates	15 April 2014 – 23 October 2014
Actual field work site	Zackenbergl
Number of man-days used in field (specify for participants)	Magnus Lund: 28 Maria R. Mylius: 49 Marcin Jackowicz-Korczynski: 14 Mikhail Mastepanov: 14 Lau G. Petersen: 28 Torben R. Christensen: 7 Kirstine Skov: 92 Laura H. Rasmussen: 48 Line V. Hansen: 28 (this list contains the full number of man-days in Zackenberg for the above-mentioned persons, for which ASP was one of the sponsors)

### Short summary, main achievements and difficulties encountered during field season (150 - 250 words)

The project turned out to be very successful. The three sub-projects; snow-pack flux measurements, fen ecosystem hydrology and carbon runoff, and eddy covariance measurement in Zackenberg river delta, were carried out as planned, providing unique and highly useful data for upcoming analysis and publications. The snow-pack measurements during the spring included flux measurements of CO<sub>2</sub> and CH<sub>4</sub>, as well as δ<sup>13</sup>CH<sub>4</sub>, both based on chamber measurements on top of the snow pack and gradient measurements within the snow profile. As for the hydrological project, 18 divers were installed within a fen ecosystem in order to determine water flow characteristics. Additionally, a v-notch was installed in a larger outlet. At all these sites we took water samples that will be analyzed for carbon and nutrient concentrations. In August, an eddy covariance system was temporarily installed near the Zackenberg river delta, providing unique CO<sub>2</sub>, energy and CH<sub>4</sub> fluxes from the area. We were lucky to have the system fully operational during a river surge, due to a glacial lake outburst flood, causing large increases in river flow affecting the land-marine-atmosphere exchange.

### Photos (1 – 3 relevant photos in high resolution. Attach all photos as individual files)

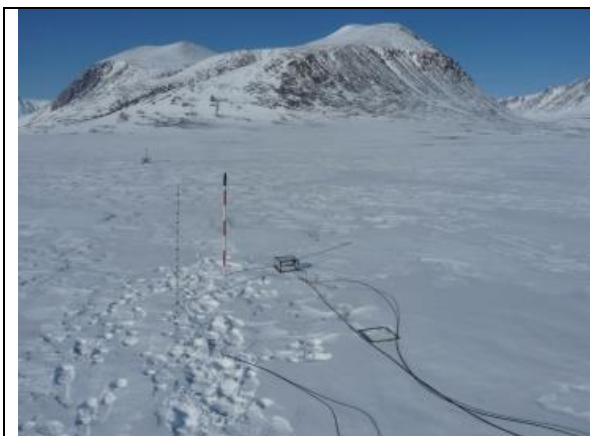


Photo 1 Snow-pack flux measurements (P1120686.jpg)

Credit: Magnus Lund, Aarhus University

Caption: Snow-pack flux measurements using snow probe and closed-chamber in Zackenberg, April 2014.

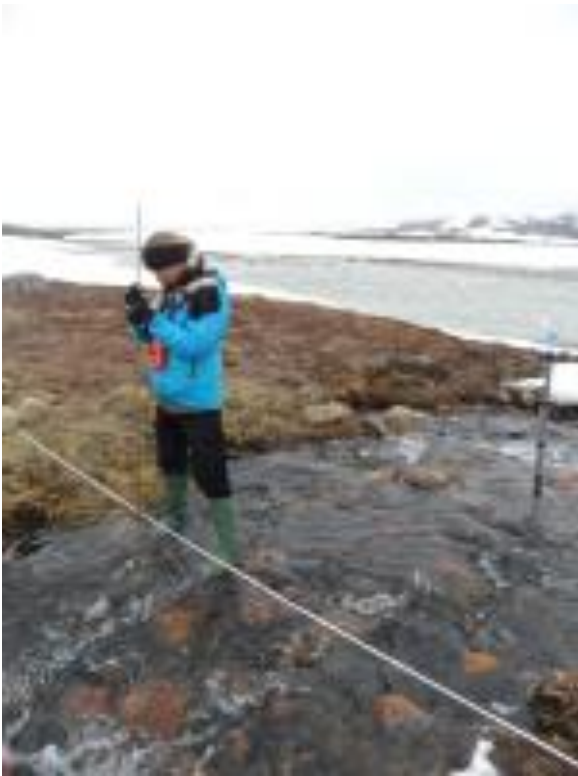


Photo 2 Hydrological measurements (SAM\_3706.jpg)

Credit: Laura H. Rasmussen, Aarhus University

Caption: Research assistant Kirstine Skov measuring stream profile in Zackenberg, June 2014.

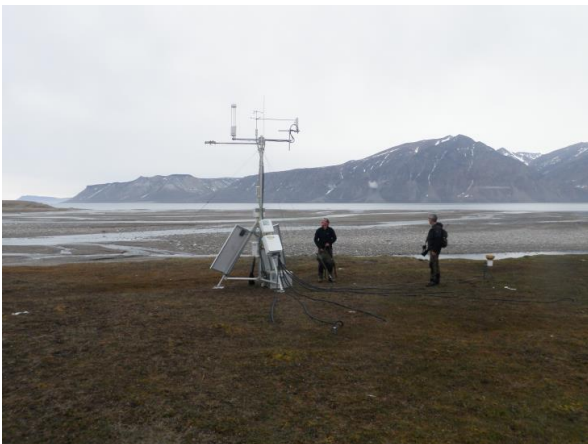


Photo 3 Delta tower (P8050025.jpg)

Credit: Lau G. Petersen, Aarhus University

Caption: Professor Torben R. Christensen and research engineer Marcin Jackowicz-Korczynski next to the newly installed eddy covariance system in Zackenberg river delta, August 2014.

### **Acknowledgements** (funding agencies, etc.)

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