

## **Session Programme Topic 3**

### **Arctic Change**

*Convener: Torsten Sachs, Birgit Heim*

The Arctic plays a key role within the Earth system. The high albedo of sea ice and of ice and snow on land determines to a considerable extent the Earth radiation budget. The huge continental ice sheets constitute the main pool for the sea level variations, and the massive and deep reaching permafrost layers contain a large reservoir of organic carbon, which could be mobilized and turned into a significant greenhouse gas source as the Arctic continues to warm at a much faster rate than the global mean.

We invite contributions to the sub-sessions of this topic, focusing on the terrestrial and marine energy, water, and carbon fluxes and ongoing changes as observed by both, in-situ and remote sensing techniques.

### **Monday, 6 October 2014**

*Umweltforum, Room S9, Seminar room 9, 1<sup>st</sup> floor*

- 14:20 TP3-O-01: Turner, D. D., M. D. Shupe, V. P. Walden, R. Bennartz, B. Castellani, C. Cox, N. Miller, R. Neely III, E. Olson, C. Petterson: The ICECAPS experiment - An overview of the integrated characterization of energy, clouds, atmospheric state and precipitation at summit, Greenland
- 14:35 TP3-O-02: Petelski, T., P. Makuch, M. Chilinski, J. Lisok, C. Ritter, R. Neuber, R. Udisti, M. Mazzola, M. Gausa, J. Struzewska, J. Kaminski, K. Markowicz, T. Zielinski, A. Rozwadowska: Aerosol optical properties studied in the Svalbard area during the iAREA campaign
- 14:50 TP3-O-03: Möller, M., C. Schneider: Possible loss of accumulation area at Vestfonna ice cap, Svalbard, in the 21<sup>st</sup> century as an indication of short-term severe climate change impacts on arctic ice caps
- 15:05 TP3-O-04: Schaffer, J., R. Timmermann, J. E. Arndt, D. Steinhage, T. Kanzow: RTopo-2: A global dataset of ice sheet topography, cavity geometry and ocean bathymetry to study ice-ocean interaction in Northeast Greenland
- 15:20 TP3-O-05: Bogorodsky, P., A. Makshtas, V. Kustov: Rapid melt of land fast-ice

### **Poster Session:**

*Umweltforum, Room WK, Winterkirche: 15:45 – 18:00*

- TP3-P-01: Markowicz, K., T. Zielinski, T. Petelski, I. Stachlewska, A. Rozwadowska, T. Stacewicz, M. Gausa, S. Blindheim, J. Struzewska, J. Kaminski, S. Malinowski, M. Chilinski, J. Lisok, P. Makuch, P. Pakszys, P. Markuszewski, A. Strzalkowska: Optical properties of Arctic aerosols studied within the framework of the iAREA research program
- TP3-P-02: Maturilli, M., A. Herber, G. König-Langlo: Changes in Temperature and Radiation at the Arctic Station Ny-Ålesund (79°N, 12°E)
- TP3-P-03: Ludwig, V., L. Kaleschke: Retrieving sea ice concentrations from 1.4 GHz brightness temperature measurements
- TP3-P-04: Andersen, O. B., L. Stenseng, C. S. Sørensen, Y. Cheng, P. Knudsen: Arctic sea level change over the past 2 decades from GRACE gradiometry and multi-mission satellite altimetry
- TP3-P-05: Safarov, J., A. Mirzaliyev, A. Shahverdiyev, E. Hassel: Thermophysical properties of seawater for climate change
- TP3-P-06: Dvornikov, Y., M. Leibman, B. Heim, A. Bartsch, B. Widhalm, A. M. Trofaier, A. Morgenstern: POLYAR - Process of Organic transport to the Lakes of the Yamal Region
- TP3-P-07: Boike, J., T. Grau, B. Heim, F. Günther, M. Langer, S. Muster, I. Gouttevin, C. Duguay: Ice, water, fire: Changes in the permafrost landscape of central Yakutia, 2000-2011
- TP3-P-08: Kohnert, K., A. Serafimovich, S. Metzger, J. Hartmann, T. Sachs: Regional variability of methane fluxes in the permafrost landscape of the Mackenzie River Delta, Canada derived from airborne measurements
- TP3-P-09: Serafimovich, A., S. Metzger, J. Hartmann, S. Wieneke, T. Sachs: Variability of surface energy fluxes over high latitude permafrost wetlands

TP3-P-10: Heim, B., A. Bartsch, A. Rinke, H. Matthes, X. Zhou, K. Klehmet, B. Rockel, C. Duguay, S. Muster, J. Boike, M. Buchhorn, A. Morgenstern, K. Elger: ESA DUE PERMAFROST: Circumpolar Remote Sensing Service for Permafrost – Evaluation and Application Case Studies

TP3-P-11: Madsen, K. S., G. Dybkjær, T. A. S. Rasmussen, M. H. Ribergaard, R. T. Tonboe: A decade of decreasing Arctic sea ice cover: Implications for Cape Farewell

## Tuesday, 7 October 2014

*Umweltforum, Room S9, Seminar room 9, 1<sup>st</sup> floor*

10:00 TP3-O-06: Karcher, M., J.-C. Gascard, J. Wilkinson: Arctic climate change, economy and society - the two EU projects ACCESS: 'Arctic Climate Change, Economy and Society' and ICE-ARC: 'Ice, Climate, Economics - Arctic Research on Change'

10:15 TP3-O-07: Ionita, M., P. Scholz, G. Lohmann, M. Prange: Relationship between the atmospheric blocking over Greenland and sea ice export through Fram Strait

10:30 TP3-O-08: Cherkasheva, A., A. Bracher, C. Melsheimer, C. Köberle, R. Gerdes, E.-M. Nöthig, E. Bauernfeind, A. Boetius, D. Antoine, B. Gentili: Greenland Sea primary production with respect to changes in the sea ice cover

10:45 TP3-O-09: Gonçalves-Araujo, R., A. Kraberg, A. Bracher: Dynamics of colored dissolved organic matter in a climate changing environment in northern Siberia

11:15 COFFEE BREAK (Umweltforum, Room S8, Seminar room 8, 1<sup>st</sup> floor)

11:45 TP3-O-10: Klemann, V., B. Heim, S. Wetterich, T. Opel, H. Bauch: Sea level evolution of Laptev and East Siberian Sea - evidence from geological data and glacial isostatic adjustment

12:00 TP3-O-11: Overduin, P., S. Liebner, C. Knoblauch, F. Günther, H.-W. Hubberten, M. Grigoriev: Permafrost degradation and methane release in the central Laptev Sea

12:15 TP3-O-12: Lenz, J., S. Wetterich, G. Grosse: Stories of the Past – Frozen archives tell about Alaskan landscape dynamics

12:30 TP3-O-13: Sachs, T., A. Serafimovich, S. Metzger, K. Kohnert, J. Hartmann: Airborne measurements of methane fluxes in permafrost landscapes (AIRMETH)

13:00 LUNCH BREAK (Umweltforum, Room S8, Seminar room 8, 1<sup>st</sup> floor)

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*Umweltforum, Room S9, Seminar room 9, 1<sup>st</sup> floor*

14:55 TP3-O-14: Muster, S., K. Roth, A. Morgenstern, M. Langer, A. Bartsch, G. Grosse, J. Boike: Zooming out: from local snapshots to a pan-arctic inventory of Arctic ponds and lakes

15:10 TP3-O-15: Bartsch, A., A. M. Trofaier, B. Widhalm, M. Leibmann: Combining remote sensing and field studies for assessment of land surface dynamics in sub-arctic environments

15:25 TP3-O-16: Golubkin, P. A., B. Chapron, V. N. Kudryavtsev: Arctic wind waves characteristics from satellite altimetry data

15:40 TP3-O-17: Klehmet, K., B. Geyer., B. Rockel: Regional characteristics of Siberian snow cover changes

15:55 TP3-O-18: Cuntz, M., V. Haverd: Physically Accurate Soil Freeze-Thaw Processes in a Global Land Surface Scheme