

Programme

Tuesday 17 September

16.00	Registration & welcome drink
18.00	Icebreaker
19.30	Dinner at Hotel Kurhaus

Wednesday 18 September

8.30	Opening remarks Christian Rixen & Esther Frei, WSL Institute for Snow and Avalanche Research SLF, Davos Robert Hollister, Grand Valley State University, USA
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8.45 - 9.30	Inputtalk I Christian Körner	Plant and ecosystem responses to climatic warming in mountains
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9.30 - 17.30 Session A: ITEX experiments

09.30 - 10.00	A.01 Robert Hollister	Introductory talk: ITEX a history of collaboration and high impact syntheses
10.00 - 10.20	A.02 Sarah Elmendorf	Thermophilization of tundra plant communities in response to ambient and experimental warming
10.20 - 10.35	A.03 Daan Blok	Summer and winter warming impacts on decomposition-controlled shrub nitrogen uptake in a low-Arctic dry shrub heath at Disko Island, West Greenland

10.35 - 11.05 Coffee break

11.05 - 11.25	A.04 Greg Henry	Reproductive responses to experimental and observed climate change in High Arctic tundra plants
11.25 - 11.45	A.05 Ellen Dorrepaal	Interactions in the Tundra: EXperimental warming and precipitation effects on mosses and their interactions
11.45 - 12.00	A.06 Isabel C. Barrio	Short-term effects of warming on <i>Gyneaphora groenlandica</i> , an ITEX insect
12.00 - 12.15	A.07 Anne Bjorkman	Twenty years of experimental warming in a high Arctic plant community: plasticity or adaptation?
12.15 - 12.30	A.08 Siri Lie Olsen	Recovery of an alpine plant community from simulated environmental change and the effects of herbivory on the recovery process

12.30 - 14.00 Lunch

14.00 - 14.20	A.09 Steven F. Oberbauer	Phenological response of tundra plants to background climate variation tested using the International Tundra Experiment (ITEX)
14.20 - 14.35	A.10 Signe Lett	Mosses as mediators of changing climate: Consequences for forest expansion
14.35 - 14.50	A.11 Jessica Lynn Gregory	Structural comparison of Arctic plant communities across a soil moisture gradient in response to climate warming in Northern Alaska
14.50 - 15.05	A.12 Elisabeth J. Cooper	ITEX and grazing: The OTCs, the geese and the aphid
15.05 - 15.15	NV	Information about the region

15.15 - 16.45 Poster coffee: Coffee break with poster presentation

16.45 - 17.00	A.13 Robert Thomas-Slider Barrett	Arctic plant responses to changing abiotic factors in northern Alaska
17.00 - 17.15	A.14 Yan Yang	Plant community responses to five years of simulated climate warming in an alpine fen of the Qinghai-Tibetan Plateau
17.15 - 17.30	A.15 Anna Maria Fosaa	A decade-long experiment of warming and grazing in alpine, oceanic vegetation

17.30 - 18.30 Brief update on ITEX sites

Daan Blok (Disko Island, Greenland), Christian Rixen (Val Bercla) and others

19.30	Dinner
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Thursday 19 September		
8.30 - 12.30 Session B: Climate change experiments		
08.40 - 09.00	B.01 Ulf Molau	Update on IPCC (Intergovernmental Panel on Climate Change)
09.00 - 09.15	B.02 Alba Anadon-Rosell	Phenology and growth of three dwarf shrub species after six years of soil warming at the treeline
09.15 - 09.30	B.03 Jonathan Henkelman	An active soil warming system powered by alternative (renewable) energy for remote field sites
09.30 - 09.45	B.04 Matthias Volk	AlpGrass: Alpine grassland global change, first results of multiple interactions
09.45 - 10.00	B.05 Shea Allison Sundstøl	Relationships between landscape position, soil temperature, and vegetation cover at three mountain sites in southern Norway: Preliminary results from an ongoing project
10.00 - 10.15	B.06 Miriam Bienau	How does flowering phenology and morphology of <i>Empetrum hermaphroditum</i> respond to changing snow cover regimes?
10.15 - 10.30	B.07 Philipp Robert Semenchuk	Carry-over effects of winter conditions to summer processes: plant growth and reproduction in the Arctic
10.30 - 11.00 Coffee break		
11.00 - 11.20	B.08 Christian Rixen	All about temperatures? Global change influences alpine plant communities in multiple ways
11.20 - 11.35	B.09 Alla Aleksanyan	On the impact of global climate change on the alpine flora and vegetation of Armenia (on example of Mountain Aragats)
11.35 - 11.50	B.10 C. Guillermo Bueno	Does competition influence alpine plants? Responses under simulated herbivory, and long-term warming and fertilization
11.50 - 12.05	B.11 Julia Anne Wheeler	Reduction of spring shrub performance under earlier snowmelt
12.05 - 12.20	B.12 Alessandro Petraglia	Effects of advanced snowmelt and increased temperatures on flowering phenology of three snowbed species
12.30 - 14.00 Lunch		
14.00 - 14.30 Input talk II		
14.00 - 14.30	Toke Høye	Shorter flowering seasons and declining abundance of flower visitors in a warmer Arctic
14.30 - 18.00 Session C: Long-term observations		
14.30 - 14.50	C.01 Ingibjörg Svala Jónsdóttir	Shaping forces of biodiversity in the Arctic – exploring the feasibility of a coherent research framework
14.50 - 15.05	C.02 Cynthia Chang	Trait, phylogenetic, and B-diversity patterns reveal community assembly mechanisms on Mount St. Helens
15.05 - 15.20	C.03 Nicoletta Cannone	Relationships between climate and phenology of high elevation plants. A 6-years snow and phenology monitoring in the Italian central Alps
15.20 - 15.35	C.04 Jill F. Johnstone	Reproducibility, precision, and time efficiency of three methods for vegetation monitoring in alpine tundra
15.35 - 16.15 Coffee break		
16.15 - 16.35	C.05 Virve Tuulia Ravolainen	How to monitor vegetation in the circumarctic – towards adaptive monitoring of shrub tundra
16.35 - 16.55	C.06 Isla H. Myers-Smith	The climate sensitivity of shrub growth is highest away from range margins
16.55 - 17.10	C.07 Martin Alfons Mörsdorf	How to choose habitats of interest- based on prior defined criteria or subjective judgment in the field?
17.10 - 17.25	C.08 Agata Buchwal	The contribution of dendrochronology to arctic research: Examples of challenges and opportunities
17.25 - 17.40	C.09 Nathan C. Healey	A mobile instrumented sensor platform for long-term terrestrial ecosystem observation: A case study in the Arctic
17.40 - 17.55	C.10 Timothy Frederick Botting	Analyzing vegetation cover change at the landscape level from Barrow, Alaska
18.00	Beer & workshop discussions	
19.30	Conference dinner	

Friday 20 September

8.30 - 11.00	Workshops
08.30 - 11.00	Workshop discussions
11.00 - 12.00	Wrap-up and closing remarks

12.00 - 13.30 Lunch, get ready for departure

13.30	Transfer to Davos (post-conference location)
16.00	Post-conference workshop Davos
19.00	Dinner

Saturday 21 September

09.00 - 17.00	All day excursion Stillberg research area Davos
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Sunday 22 September

11.00	Departure & return to Bergün for participants of the second conference
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Posters

P.01	Jeremy L. May	Heterogeneous response of tundra vegetation to warming
P.02	Samuel Victor Joseph Robinson	Warming and flower pollination effects within OTCs
P.03	Alison Leslie Beamish	Use of digital photography to detect plot level changes in greenness
P.04	Josef Elster	Impact of warming on the physiology of <i>Nostoc</i> colonies (Cyanobacteria) and on the decomposition rate in wet hummock tundra, Spitsbergen
P.05	Changting Wang	Effects of long-term experimental warming on plant species richness, biomass and soil microbial community structure in a <i>Kobresia humilis</i> meadow on the Qinghai-Tibet Plateau, China
P.06	Esther Frei	Warming effects on low and high elevation populations of three grassland species
P.07	Konstantin Gavazov	Effects of experimental climate change on the decomposition of <i>Fagus sylvatica</i> leaf litter along an altitudinal gradient in contrasting land use types
P.08	Kelseyann S. Kremers	Consistency of short-term and long-term response of arctic plants to warming
P.09	Ketevan Batsatsashvili	Lichens of the alpine zone of the Central Greater Caucasus (baseline data)
P.10	Mihai Pușcaș	Changes in floristic structure of alpine vegetation in Rodna Mountains (Eastern Carpathians, Romania): 7 years of monitoring (2001-2008)
P.11	Milena Kociánová	Micro relief and vegetation of melting non-sorted polygons as an indicator of future changes - example from the Abisko area
P.12	Sergio Armando Vargaș	Relating multi-scale phenology to Arctic ecosystem parameters using various high spatial and spectral resolution remote sensing techniques

Post-conference excursion Davos

The post-conference excursion will take place in the area of Davos, a 1-hour train ride from Bergün. We will visit the research area Stillberg at the alpine treeline, see details below.

Insurance

Insurance is the responsibility of the participants. Every participant needs an accident and health insurance valid for Switzerland.

Schedule

Friday 20th September

Transfer to Davos in the afternoon.

Saturday 21st September

9 AM excursion starts (departure from hotel)

5 PM excursion ends (arrival at the hotel or the train station). It is possible to leave earlier if people have to.

Dinner at the hotel

Sunday 22nd September

Breakfast at the hotel

Departure (transfer back to Bergün or to the train station)

Practical information

The excursion will take place in mountainous terrain and include a hike of c. 3h on relatively steep hiking trails. Boots with good grip are absolutely necessary!

Transfer to Davos will take place after the conference on Friday afternoon. For those wishing to travel back to Bergün after the excursion, transfer back to Bergün will be on Sunday before lunch. We arranged for a safe storage space in Bergün for those wishing to travel to Davos with lighter luggage.

Travel information

We recommend participants attending only the ITEX conference to depart directly from Bergün. The train journey from Davos Dorf to Zurich airport takes about 2 hours 45 minutes.

There are hourly train connections from Davos Dorf to Zurich airport. Departure time at Davos Dorf from 8.06 every hour at 06 minutes past the hour. Change trains at Landquart and Zurich main station. Last train leaves at 20.06h.

For those participants, who travel back to Bergün after the excursion, transfer back to Bergün will be on Sunday before lunch. The journey from Davos Dorf to Bergün takes about 1 hour.

Treeline research area Stillberg

The research area Stillberg at the alpine treeline has been established in the 1950s in collaboration between the WSL-sites Birmensdorf and Davos ("Gebirgsprogramm"). The original aim of this research area, established in the 1950s, was to find appropriate afforestation methods in potential avalanche starting zones near treeline. Since 1975, the research area has been systematically planted with 92'000 trees (Larches, Stone pines, Mountain pines) and provides unique information about long term effect of different environmental factors for treeline trees. Furthermore, during the last decades the research area Stillberg has increasingly served as experimental basis for studying climate change effects on treelines.



Outline of some of the recent research activities on Stillberg:

- **Long term monitoring Stillberg (SLF / WSL)**
From 1975 until 1995, an intensive monitoring of the planted trees have been conducted and repeated in 2005. A comparison of different stages of the afforestation allows to study and disentangle the influences of different environmental factors and how they change in space and time.
- **Alpine treelines in a CO₂-rich and warmer world (WSL/SLF and other partners)**
The response of plants and soils near treeline on future climate scenarios is simulated by exposing them to higher CO₂-concentrations (+200 ppm) and warmer soil temperatures (+4°C).
- **Experiments on nutrition limitations near treeline (SLF)**
In this fertilization experiment, we investigate if nutrition plays a role as limiting factors for trees and dwarf shrubs near treeline, if their growth is increased and/or if they are more susceptible to other stressors.
- **Plant responses to winter climate change? (SLF)**
In order to simulate effects of climate change on plants, we manipulated and artificially shortened the duration of the snow cover. We then investigated responses of this treatment on live cycles, growth and reproduction of plants. These experiments have been conducted on Stillberg and in tundra ecosystems in Alaska.
- **Plantation of exotic species (WSL)**
Between 1984 and 1985, exotic treeline species from other mountain ranges have been planted on Stillberg (and 3 other sites in Switzerland). This allows the comparison of their growth and survival with autochthon treeline species.