SCALING CLIMATE CHANGE EXPERIMENTS ACROSS SPACE AND TIME: Challenges of informing large-scale models with small-scale experiments

CLIMMANI-INTERFACE Workshop

Mikulov, Czech Republic, June 4th–June 7th, 2013
Climate change experiments in terrestrial ecosystems build our fundamental understanding of plant and ecosystem responses to climatic perturbations, and this information informs model design and parameterization. Experiments typically focus on drivers and responses at relatively small scales (spatial and temporal). Scaling the information from these plot-level experiments to landscape- or global-scale models operating over decades or centuries provides a significant challenge. In recent years, climate change research has increasingly acknowledged the importance of extreme events as a significant component of climate change. This provides an additional and significant challenge in both experimentation and modelling.

This workshop, co-hosted by ClimMani and INTERFACE, will bring together experimentalists and modellers to discuss challenges associated with scaling, present the current state of the art, and identify future directions for overcoming the disparities in scales between climate change experiments and plot and global scale models.

The workshop will focus on four themes:

- Scaling from small plots to landscapes and regions: what works, and what doesn't?
- What have we learned from work on elevational and environmental gradients?
- Drivers of biome shifts: Making small-scale measurements of disturbance, tipping points, thresholds, and mortality relevant for large-scale models
- Trait responses to environmental change - Maximizing the benefits of trait information and moving from static to dynamic traits

**ClimMani in Europe and INTERFACE in the US are networks that bring together researchers working on climate change effects in terrestrial ecosystems in order to facilitate interaction, syntheses of results and collaboration. The networks place particular emphasis on bringing together experimentalists and ecosystem and earth system modelers.**

This scientific workshop will take place in Mikulov, in the Czech Republic, from June 4-7. We believe the four session topics will provide critical insights
into how experiments can be designed to understand impacts of key climate change-related drivers, and how these drivers can be linked to modeling at the plot, regional and global scales. A special focus of the conference is how to represent extreme events better in both experiments and modeling.

Each session will provide 4-5 presentations to synthesize and discuss the state of knowledge within the area, to identify gaps in knowledge and abilities of models to capture our current understanding at a local and global scale. Each session will be chaired by researchers from the US and Europe with particular experience within the topic. In addition to talks, there will be a poster session, breakout sessions, and time for discussion.

The overall organizing committee consists of Petr Holub and Karel Klem from the Czech Republic, and the chairs of ClimMani (Claus Beier, DTU, DK) and INTERFACE (Jeff Dukes, Purdue University, US). The four scientific sessions are organized by the session chairs.

### Sessions and session chairs

<table>
<thead>
<tr>
<th>Session topic</th>
<th>Session chairs</th>
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<tbody>
<tr>
<td>What have we learned from work on elevational / environmental gradients</td>
<td>Aimee Classen, Christian Körner, Bill Parton, Sophie Zechmeister Boltenstern</td>
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<tr>
<td>Scaling from small plots to landscapes and regions: what works, and what doesn’t?</td>
<td>Hans de Boeck, Elena Shevliakova, Sophie Zechmeister Boltenstern</td>
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<tr>
<td>Drivers of biome shifts: Making small-scale measurements of disturbance, tipping points, thresholds, and mortality relevant for large-scale models</td>
<td>Claus Beier, Petr Holub, Lindsey Rustad</td>
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<tr>
<td>Trait responses to environmental change - Maximizing the benefits of trait information and moving from static to dynamic traits</td>
<td>Jeff Dukes, Josep Penuelas, Peter van Bodegom</td>
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### Preliminary schedule for the conference.

<table>
<thead>
<tr>
<th>3rd June</th>
<th>4th June</th>
<th>5th June</th>
<th>6th June</th>
<th>7th June</th>
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<tbody>
<tr>
<td>8:30-12.30.</td>
<td>Arrival</td>
<td>Science session</td>
<td>Science session</td>
<td>Science session, discussion and wrap-up</td>
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<tr>
<td>12.30-13:30</td>
<td>Excursion</td>
<td>Lunch</td>
<td>Lunch</td>
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<tr>
<td>13.30-15.00</td>
<td>Excursion</td>
<td>Science session</td>
<td>Science session</td>
<td>Departure</td>
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<tr>
<td>15.30-19.00</td>
<td>Arrival for some</td>
<td>Excursion for some</td>
<td>Break out &amp; poster sessions</td>
<td>Break out &amp; poster sessions</td>
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<tbody>
<tr>
<td></td>
<td>Dinner</td>
<td>Conference dinner</td>
<td>Dinner</td>
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How to participate in the meeting:

STUDENTS/POSTDOCS: We invite applications to attend from graduate students and postdoctoral researchers. Funding is available to support travel and accommodation. **For European students:** submit a one-page CV that includes the name of three references (including your current dissertation or postdoctoral advisor), a short paragraph on why attending the meeting would enhance your career, and a poster abstract to Claus Beier (clbe@kt.dtu.dk) with "CLIMMANI/INTERFACE application_your last name" in the subject line. Application deadline is **May 1st, 2013.** All students and postdocs will be REQUIRED to present a poster at the meeting. **For US students:** Visit the INTERFACE website and follow instructions there (http://www.bio.purdue.edu/INTERFACE/index.php).

OTHER RESEARCHERS: We encourage applications from interested researchers for a number of unfunded spaces at the meeting; if you would like to participate in the workshop, please email Claus Beier (Europe, Asia, Australia) or Jeff Dukes (N and S America, Africa; jsdukes@purdue.edu) with the subject "INTERFACE application_your last name." Include the title and abstract of the poster you would bring. Application deadline is **May 1st, 2013.** There is no registration fee for the workshop.
Some practical issues

Local organizer: Karel Klem - tel: +420 511 192 257, mobile: +420 724 285 737 – E-mail: klem.k@czechglobe.cz or holub.p@czechglobe.cz

Conference location: Mikulov - about 1 hour drive from the Vienna International airport or 40 min drive from Brno airport.

The conference will be held in:
Hotel ELIŠKA
Piaristů 4, CZ-692 01 Mikulov, Czech Republic
tel/fax: +420 519 513 073
Mobile: +420 777 003 692
www.hoteleliska.cz

Accomodation will be provided in:
Hotel ELIŠKA
Piaristů 4, CZ-692 01 Mikulov, Czech Republic
tel/fax: +420 519 513 073
Mobile: +420 777 003 692
www.hoteleliska.cz

Hotel RÉVA
Česká 2, CZ-692 01 Mikulov, Czech Republic
tel/fax: +420 519 512 076
Mobile: +420 608 400 032
www.hotelreva.cz

Hotels are already booked. The hotel Réva is situated close to place of the conference. It takes 10 min by foot. See map below - hotel Eliška (1) and hotel Réva (2). There is a wireless internet free of charge in the lobby and in the rooms.
Arrival:
The local organizers will try to arrange transport in connection to all main arrival times on 3rd and 4th June.

Currency:
The currency in Czech Republic is CZ crowns (CZK in the Exchange office). There is a bank and an exchange office at the airport, and hotels usually have the exchange desk.
Exchange rate approx: 1 Euro = 26 CZK, 1 USD = 20 CZK. Credit cards are generally accepted.

Electricity:
AC 220V 50Hz, UK and US participants will need adapters.

Weather:
In June, air temperatures typically vary between 13°C and 23°C (average: 18°C). The sum of precipitation in June is around 70 mm (long term average).

Reimbursement and additional costs:
For participants funded by CLIMMANI or INTERFACE, travel costs will be reimbursed after the workshop based on original receipts. More information will be given directly in Mikulov or in your invitation letter. For funded participants, ClimMani or INTERFACE will pay the hotel costs (accommodation and food) directly to the hotel. The arrangements with the hotel start with dinner on June 3rd or lunch on June 4th and end with lunch on June 7th 2013. Extra nights at the same hotel and costs for accompanying persons will be charged separately.