Dynamic Vegetation Models: The Next Generation Workshop Agenda

Wodak Room, IIASA, Schlossplatz 1, A-2361 Laxenburg, Austria

Monday, March 27, 2017	
14:00 – 14:20	**Welcome, Project background and goals** (IIASA Director General and CEO *Pavel Kabat*, Project organizers)
14:20 – 15:10	**Presentations – Evolution and optimization approaches** (Chair – *Colin Prentice*) *Ulf Dieckmann* – Dynamic vegetation models based on eco-evolutionary principles *Åke Brännström* – Eco-evolutionary modeling of forests, tree traits, and diversity *Jerome Chave* – Approaches, hypotheses, or data that can help to improve vegetation models *Caroline Farrior* – Role of competition in vegetation change: utility of evolutionarily stable strategy analysis *Roderick Dewar* – Optimisation and probability: random thoughts on next-generation DVMs
15:10 – 15:20	Discussion
15:20 – 15:35	Coffee
15:35 – 16:30	**Presentations – Eco-physiology** (Chair – *Oskar Franklin*) *Colin Prentice* – Acclimation of photosynthetic parameters – key insights for better models *Han Wang* – Predicting plant eco-physiological traits and processes from first-principles *Ian Wright* – Better articulation of trait datasets with vegetation models *Stefano Manzoni* – Plant responses to drought *Adam West* – Examining the hydraulics of drought response in different plant functional types
16:30 – 16:45	Coffee
16:45 – 17:05	*Peter Thornton* – The role of storage pools in resolving nutrient limitations to plant growth *Stephan Pietsch* – Parameter variability: steady-state, acclimation, and epigenetics
17:05 – 17:20	Discussion
17:20 – 17:50	**Presentations – Methods** (Chair – *Ulf Dieckmann*) *Stan Schymanski* – Generality and falsification of vegetation models *Marcel van Oijen* – Scales, uncertainties and feedbacks *Elena Rovenskaya* – Size-structured population models: simulation and policy optimization
17:50 – 18:00	Discussion

Tuesday, March 28, 2017	
09:15 – 09:45	**Presentations – Human impacts and management** (Chair – *Elena Rovenskaya*) *Michael Obersteiner* – Methods and scenarios for forest management *Wolfgang Cramer* – Requirements for useful vegetation models *Almut Arneth* – Some key limitations of vegetation models, especially with respect to interactions with humans
09:45 – 09:55	Discussion
09:55 – 10:10	Coffee
10:10 – 11:20	**Presentations – Soil and plant-soil interactions** (Chair – *Åke Brännström*) *Annikki Mäkele* – Some thoughts on the controls of C and N cycle in forests *Stefano Manzoni* – Linking soil microbial metabolism to nutrient availability *Beni Stocker* – Belowground C allocation *Sönke Zaehle* – Quantifying the effects of interacting nutrient cycles *Cesar Terrer* – From FACE to the globe: an upscaling approach to quantify the CO_2 fertilization effect globally *Karin Rebel* – Carbon, nitrogen and water in DVMs *Oskar Franklin* – Modeling mycorrhiza
11:20 – 11:30	Discussion
11:30 – 11:45	Coffee
11:45 – 12:45	**Presentations – Functional diversity** (Chair – *Wolfgang Cramer*) *Michel Loreau* – Effects of biodiversity on ecosystem functioning *Josep Penuelas* – Putting (more) ecology into ESM and IAM *Guy Midgley* – Approaches, hypotheses, or data to improve DGVM – questioning climate determinism *Peter van Bodegom* – Traits-based modeling approaches for a next generation of DGVMs *Florian Hofhansl* – Tropical forest ecosystem responses to projected environmental changes *Philippe Ciais* – From discrete to continuous vegetation in DGVMs
12:45 – 13:00	Discussion
13:00 – 14:30	Lunch (Schlossrestaurant)
14:30 – 17:30	**Parallel discussion sessions.** The purpose is to identify and outline key points in each area to be addressed in a review and a perspective paper. See instructions below. 1. Ecophysiology – Wodak Room (Keynote: *Colin Prentice*) 2. Evolution and optimization approaches – Raiffa Room (Keynote: *Ulf Dieckmann* and *Åke Brännström*) 3. Soil and plant-soil interactions – Environment Room (Keynote *Oskar Franklin* and *Stephan Pietsch*)

Wednesday, March 29, 2017	
09:15 – 12:00	**Parallel discussion sessions.** The purpose is to identify and outline key points in each area to be addressed in a review and a perspective paper. See instructions below.
	4. Functional diversity – Raiffa Room (Keynote: *Peter van Bodegom*)
	5. Methods – Environment Room (Keynote: *Stephan Pietsch* and *Elena Rovenskaya*)
	6. Human impacts and management – Wodak Room (Keynote: *Michael Obersteiner*)
12:45 – 14:00	Lunch (Schlossrestaurant)
14:00 – 18:30	**Presentation of outcomes from the parallel sessions, followed by discussions**
14:00 – 15:40	1. Eco-physiology, 2. Evolution and optimization approaches
15:40 – 16:10	Coffee or ice cream (in case of nice weather)
16:10 – 16:50	3. Soil and plant-soil interactions, 4. Functional diversity
16:50 – 17:05	Coffee
17:05 – 17:45	5. Methods, 6. Human impacts and management

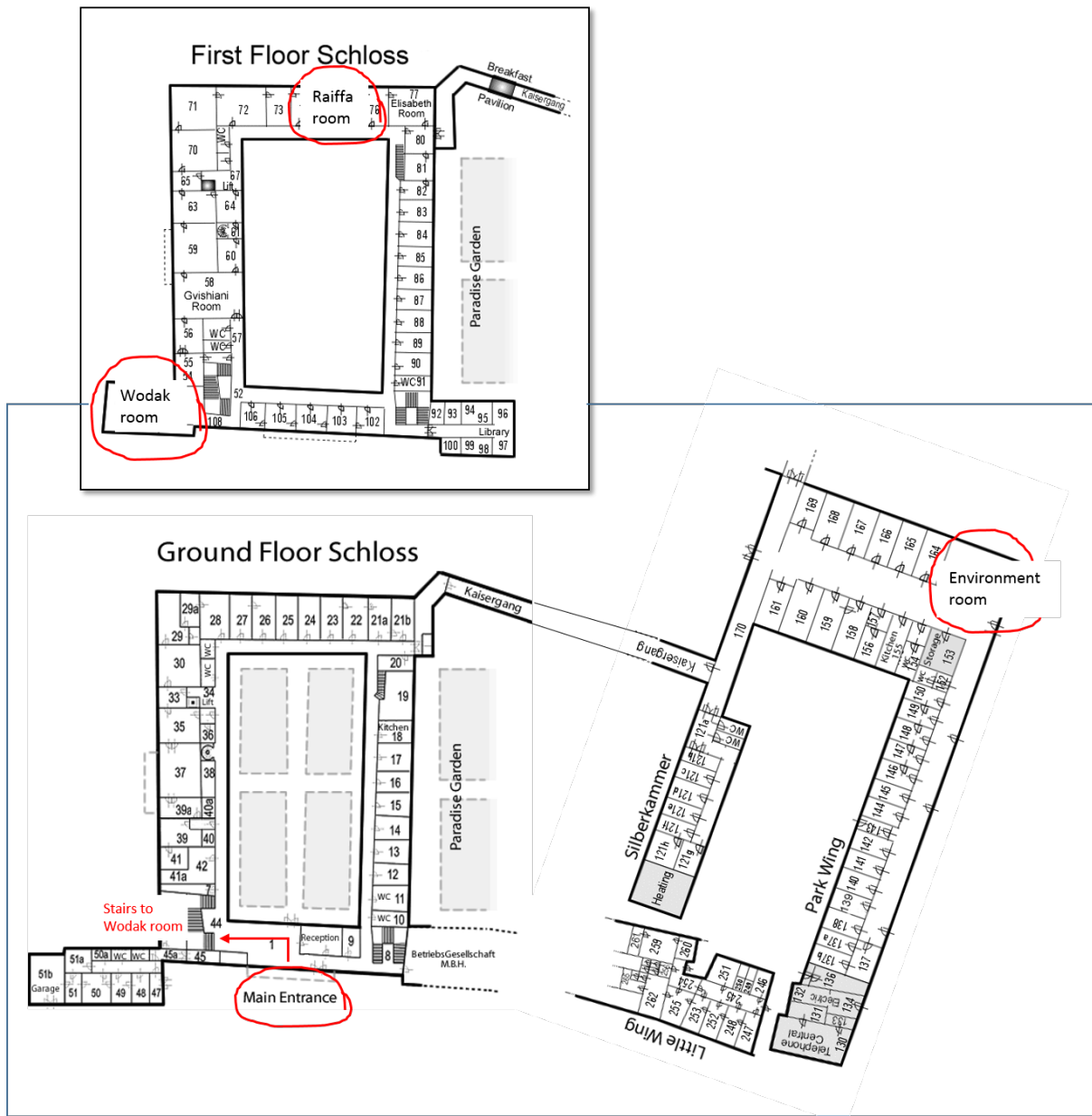| Thursday, March 30, 2017	
09:15 – 10:20	**Planning of the review paper**
10:20 – 10:40	Coffee
10:40 – 12:10	**Planning of the perspective paper**
12:10 – 12:15	**Final remarks** and closing of the workshop

Parallel discussion sessions – instructions

The goal of these sessions is to identify and outline key points to be addressed in the papers we plan to write collaboratively after the workshop:
(i) a review paper presenting the state of the art and key limitations of current vegetation models, and
(ii) a perspective paper presenting new approaches, hypotheses, or data that can help improve vegetation models (in terms of realism, accuracy, and robustness) by applying principles of adaptation and optimization rooted in natural selection.

The sessions will start with a keynote presentation to provide an inroad into the area. The discussion groups will then aim at delineating the state of the art and key challenges in the area. Each group shall select one or more participants to take notes and present the outcomes of the discussion session on slides in the subsequent plenary session.

Additional information

Map of IIASA buildings and location of meeting rooms

Wifi

Log in to the IIASAguest network

Username: dvm, password: iiasa

Note: The settings for the IIASAguest network connection has to be: Network Authentication: Open, Data Encryption: Disabled