Evaluation results: Terrestrial Biosphere, part 2 (Sep 2017)

Course details

The course focused on processes important in biosphere-atmosphere exchange of greenhouse gases as well as methods used to scale these exchange processes to understand their importance in global biogeochemical cycles. The emphasis was on plants since soils are covered in a separate course.

Agenda of part 1:

- Introduction by Carlos Sierra (day 1)
- Biodiversity by Christiane Roscher & Anne Ebeling (day 2)
- Ecophysiology by Henrik Hartmann (day 3-4)

Agenda of part 2:

- Large scale biodiversity by Axel Kleidon (day 5)
- Plant traits by Jens Kattge (day 6 am)
- Modelling plant/soil by Carlos Sierra (day 6 pm)

Detailed information is provided on the following webpage: http://www.imprs-gbgc.de/index.php/Courses/Biosphere2017

13 out of 13 participants filled in the survey on part 2 of the course by Sep 18, 2017.

IMPRS-gBGC,
MPI Biogeochemie,
P.O. Box 10 01 64,
07701 Jena, Germany

Phone +49-(0)3641-576260
Fax +49-(0)3641-577260
E-Mail: imprs-gbgc@bgc-jena.mpg.de
Web www.imprs-gbgc.de

Spokesperson:
▷ apl. Prof. Dr. Gerd Gleixner
Coordinator:
▷ Dr. Steffi Rothhardt

Survey results

Please remark on the overall structure of the course.

- (5x) fine/very good/excellent
- (3x) well organized
- Organized with enough details as well as comprehensive.
- I like the overall combination of experimental and theoretical approaches to the biosphere that already includes different scales!
- The structure with lectures and practical parts was quite good.
- Days were too spread apart compared to first part.
- somehow there was a big chunk attributed to modelling, which was less useful and more difficult to follow (for me).
- It included the topics and methods needed for each project and study. I learnt so much.
- in my opinion, the "modeling" part should be given in separate course

Which parts of the workshop were especially good (and why)?

- (4x) Axel's part - Large scale biodiversity (day 5)
  - as most interesting as it described more global/general patterns, though this part could be even stronger
  - because the topics have relation with my work.
  - I like it when more time is allocated for discussion and to ask questions
  - very well structured lectures. Easy to follow and interactive!
- (2x) Jens' part - Plant traits (day 6 am)
  - maybe just because it is a topic I am very interested in. But we got a good overview of plant traits and their relevance.
  - very interesting and inspiring. The instructor talked about his personal work and experiences, which is very useful for young researchers.
- (3x) Carlos' part - Modeling plant/soil (day 6 pm)
  - very well structured lectures. Easy to follow and interactive!
  - building a simple biogeochemical model was very good as it was easy to understand without prior knowledge on this topic. Besides his style of giving lectures encourages the audience to think about the topic and ask questions.
  - more interactive and practical.
  - Seeing the way mathematical models are constructed lets you understand better how to think of the modeled processes.
  - The non-linear regression part
  - the modeling exercised were particularly good because gave us tools to deal with the different ecosystem theories through models

- I found both the lectures from Axel, Jens and Carlos to be interesting.
- Terrestrial biosphere because a lot of practical courses involved.

Which parts of the workshop were not so good / not so fitting / not well enough presented?

- (6x) Everything was good.
- Axel's part - Large scale biodiversity (day 5)
  - Thermodynamics suggests an alternative and pretty interesting view of the global BGC. Yet, it is often overlooked. So, give Dr Axel Kleidon more hours to teach us.
- Jens' part - Plant traits (day 6 am)
  - too much one-way information conveying (still interesting!), should allocate more time for interactions
  - functional traits theory and analysis were not so clear to me
  - could improve the amount of information, but that's complaining on an high level. Modelling exercises a bit boring since we only run existing scrips (and you can do that without any understanding…)
  - Building a simple biogeochemical model in 3 steps of abstraction
- Carlos' part (day 6 pm)
  - not well enough presented. Maybe it is better to include such material for separate course about modeling
  - The modelling exercise was a bit disappointing. We just changed some parameters in R code. It would be more useful to do a very simple example by our own.
  - Vegetation models
- In some lectures, many abbreviations were used without explaining them which made it a little hard to follow if you do not know them.

Please suggest components that a future course should include.

- Maybe a strong component about FLUXNET at differents levels (physiologic, ecosystem) could be great
- Allocate more time for vegetative model
- Vegetation models
- More remote sensing =)
- Thermodynamics.
- Basic modelling (R/Python) in smaller groups? Could be lead by PhDs as well…
- Regarding the modeling part maybe a more slow/introductory lecture (maybe 1/2 a day, like the one given by Carlos Sierra in the soil course) for those who do not know anything about it would be nice.

Evaluation of the individual modules.

Plants in Landscapes & large scale biodiversity / biogeography by Axel Kleidon (day 5)

- It was well taught. Could have spent more time on modeling aspect.
- very good
- Nice overview, I learned a lot
- Well structured lectures. More emphasis on thermodynamics is needed, but maybe this could be achieved in a separate course..
- More details about vegetation models
- GOOD: - structure & timing - I like the physical approach. Normally physics are a bit underrepresented in biogeosciences... - interactive lecture! IMPROVEMENT Maybe sit together with Carlos (or who else will do another modelling day) and plan 3-4 littel projects (developing a small model, testing/sensitivity analysis) that can be done in small groups in the afternoon lessons
- The lecture was nice but maybe some more examples could be added. The practical part was easy to understand and use but should mabe be discussed a little more in the end.

Plant traits by Jens Kattge (day 6 am)

- Introduction to various DGVMs was quiet nice.
- a little too rigid/ not dynamic in speech (acknowledging individual styles, just saying)
- Very good module!
- Excellent presentation. It would be interesting if we had more time to look deeper at the statistical methods used in Dr Kattge's research.
- More details about plants traits in relation to climate changes
- GOOD great overview about DGVMs & plant traits and how databases can help to develop new models IMPROVMENT timing/amount of information
- As mentioned before, some slides were not that easy to understand without knowing the abbreviations used.

Modeling plant/soil by Carlos Sierra (day 6 pm)

- Good explanations of the mathematical models.
- I liked the modelling part in R. Carlos made it simple and easy to follow.
- very good
- Adapting other peoples code will never have the same effect as writing own code and understanding what we are doing.
- Due to the broad background of the students it might be a good idea to split the audience into two groups. The modellers and the non-modellers.
- More introduction about the models

- GOOD: - structure & timing - starting from scratch & with the very basics help PhDs that do not model at all to understand the idea behind! - interactive lecture! IMPROVEMENT (see above!) Maybe sit together with Axel (or who else will do another modelling day) and plan 3-4 little projects (developing a small model, testing/sensitivity analysis) that can be done in small groups in the afternoon lessons
- The lecture was very good. For the practical part the state of knowledge of the audience was very diverse therefore I could not follow in the time given while others finished very quickly. I would have liked to discuss all taks at the end and not in between so that a slow person could follow the discussion at least for the first tasks that he/she was able to finish.