Feedbacks on the course “First steps in Atmospheric Modelling” arranged in Lund, Sweden from the 6-17 of June 2016-05-30

1. How is your overall feeling about the course - was it useful for you?

I really enjoyed the course and found it very useful. It was a great introduction to both Fortran and atmospheric modelling.

Great! I’m overwhelmed of how well this course suited my purposes. I really liked the connection between the lectures and then implementing the ideas into a program. This layout of the course was very very good.

It was useful in terms of atmospheric modelling principles and programming logic. With the intensive guidance, I found that I learnt a lot.

Generally, the course was a very good experience of starting atmospheric modelling. It is definitely useful for me to know how different model components interact and how to build a simple 1-D atmosphere model

My overall feeling about the course is very good. The organization was very smooth and I think I learned a lot. I am really motivated now to continue in this field!
Thanks for the great 10 days do all of the organizers/teachers!

It was complicated but interesting, and challenging. Very informative, very useful.

It was very useful for me and I learnt new things.

This course was useful for me and I learned a lot during this course

Course was great and very useful.
2. What topics would need improvements?

As we talked about during the course the preparations of understanding basic programming could have been a bit more thorough. Only to make sure that the people in the course wont have to struggle with for example how a basic do loop works or understanding the difference between an array and a matrix. But by doing the suggested Fortran excercises in advance of the course these kind of aspects wouldn’t be a problem. And maybe some basic programing experience should be required by the participants. It would also be good to send out an example files to compile (including the Fortran 77 solver for example) on your laptop in advance to see that everything is working with the compiler on each computor. It would be good to make sure the participants had a plotting program.

Since the courses cover a wide range of topics and some of us don’t have much knowledge on some topics. It is generally good to provide some reading materials before the course. For numerical modelling part, it needs a bit more deep explanation.

The dry deposition lecture was somewhat hard to follow.

I was not really happy about the way the simplified form of the Navier-Stokes equation was derived. However, I do understand that we were very limited in time.

All the topics are well covered in my opinion

A bit less equations in the first lectures? Maybe to split separately math part and theory part.

3. Was there any topics missing that you think should be included in the future?

I think it could be nice to cover a few slides with 3D model, not only letting us knowing the simplified model in the exercise. If possible, we could even have some educational version of earth system models in one of exercise. Just play around a bit to get the feeling how it works.
Maybe talk a bit longer about how to solve differential equations since it is so central to the boundary layer meteorology.

Short crash course on differential equations as an optional thing for those who are not using them on everyday basis

I think for such a short course it was great so include so much and the span of what's covered is also well thought through.

4. What is your overall feeling about the lectures?

They were good. It was good to combine hands on lectures about coding with some general lectures about modelling.

Very good. Impressing with the teachers who flew in for just a couple of lessons. I greatly appreciated it. I think they covered everything in a way that you got an overall feeling of the system and what was needed to implement it into a program.

The lectures were useful but every single lecture included too many contents within one to two hours. Students could hardly memorize what the principles of modelling were when they worked with the coding. It turned out that some students focused on putting equations in Fortran without understanding why.

Interesting and informative. Some could have more summing up in the end

They are informative, but would prefer to more have some up-to-date (current knowledge gap and model development stage) knowledge about this modelling field.

My experience concerning the course as a whole was great.

I liked the lecture schedule a lot: introduction to a topic followed by how we deal with it mathematically.
I would prefer to have less time for lectures and more time for programming. Although all information in lectures were useful but for this period of time I prefer just to know all necessary information for programming.

Lectures were good. I don’t think anybody ever felt ashamed or nervous about questions at any point either.

5. Was the course book useful and should it be continued as a hardcopy?

Course book was useful when we would like to look up for equations and instructions for coding. It is good to have a hardcopy. However, it would also be environmental-friendly to keep the other parts as softcopy.

Very helpful

Yes it was very useful and I think you should keep it as a hardcopy. I made it hard to copy paste code which was probably good to learn the code better. It was also good not to have to switch between windows on the laptop.

Very useful

I found it very useful. I could have had it on my computer as a pdf as well but it was nice to have a hardcopy. It was nice to be able to write on it, both the lectures and the modelling descriptions.

Personally, I prefer to have pdf before the course and we can decide if we want to print it by ourselves.

Yes, it was so useful but maybe you can just summarize important parts for programming in fewer pages instead of all slides, like the important equations instead of all derivations.

Yes, it was helpful. I would recommend that soft copy should also be provided.
Course book was useful for a lot of things. Maybe make it more tailored to the coding exercises, although this may take some of the aspect of solving the problem by yourself.

6. What is your overall feeling about the coding sessions?

For the first coding session (BLM), more instructions, like step by step, were needed until we could get familiar with what we were supposed to do in later stages. It is also good to emphasize the work flow and the final outcome in the very beginning, so that we could have a brief idea of what has to be achieved in the end.

Very good, nice to help each other but as mentioned the last day, one more teacher to ask during these sessions would have been really nice for this size of a group.

I liked them as they were

I really enjoyed it. The skeleton code was very handy. I think in some parts more of the code could have been provided. It is hard enough to get the model working and connecting the different modules. Hours spend on looking for easy mistakes in equations and constants could have been spend on better understanding how to connect the models.

Coding sessions were intense but strangely enjoyable (at times). Help was given without question.

Great! A lot of support

For chemistry part, I personally think it is a good exercise to solve all differential equations, but after all the time spent to type the equations, we did not get much overall view how we could solve these problems in an more efficient way. So I suggest we could solve a few (with reduced number) equations, but keep more focus on how to efficiently use existing tools.

It was good. Although as it was mentioned before, we needed more assistance for coding sessions.
The coding sessions was fine. However, more attention should be given to people that are not familiar with programming language or that have not code before.

7. What do you think about the workload during the course? (Too little to do, too much to do or just about the right amount of work?)

The workload was about right.

For me it was the right amount of work I put in the course. Lots of coding after lecture hours but I enjoyed that. I got behind a bit since I struggled with my compiler the first week but apart from that I think the workload was good. However, I also think as mentioned that the equations for the k-values and (chemical constants) and ydot equations could have been given us since too much time went into implementing these. It would have been better to spend this time on the aerosol model and implementing everything into the boundary layer model. I think it would have been good if everyone got all the way in the modelling (boundary layer model with both chemistry and aerosols). One way could have been to give the k-value equations and keep the ydot equations for the students to do.

Perfect. Especially considering different levels

I think the workload was a little bit too high, but manageable.

I think it was a little too much. Although I was experienced in using fortran I could not finish in time.

Just about the right amount of work

I think it is right amount of work, except the chemistry part.

I think it was the right amount of work. A challenge for everyone but harder for the people that had never coded before.

If we had less typing like chemistry part, we could manage our time to finish all tasks.
8. How you enjoyed the social activities?

The social activities were awesome. The effort of preparing for the barbecues, the volleyball plays and the station visit had to be appreciated. The atmosphere of the second volleyball play and barbecue seemed not as good as the first time. It might be because of the duplication of the activities, from the point of view of students.

Very good indeed. Great with volley ball to burn some physical energy in contrast to all sitting still. Great social barbeque that gave us time to get to know each other. To see the measurement station was also much appreciated. Great trip to Copenhagen and great last dinner. And Pontus’s efforts on baking buns and bread for us was amazing. We felt really invited and it was also very tasty. All this was very generous.

I enjoyed the ones I participated in. I think it is really good to arrange such things and force the students outside away from their laptops. It is good to have more than 1 activity to keep the stress levels lower during the entire course.

They were really needed, even modellers need fresh air and movement!

Il the social activities were great including the trip to Copenhagen

Social activities were great, sports, bbq and alcohol are a great way to loosen everyone up. Plus the added selflessness of Pontus, going out of his way to provide everyone with homemade food and organising activities.

Social activities were great and needed. I think it helps a lot to build friendships and find cooperation partners for the coding sessions. Furthermore you can get some distance from the science.

They were good.

It is very nice to have these activities to know each other a bit.
9. Any other comments?

At least to me, this intensive course was a success. A big applause to all the lecturers and tutors. What could be done further to polish the course is to state clearer of the given constants, like [isoprene], [H2O], the fixed temperature, etc. A list of those constants could be made to avoid that students kept asking the same question. It is also interesting if setting one part of the course work as group work - in a group of 2-3 - so that everyone in the group has to make sure the others understand everything.

One of the biggest challenges is to keep people motivated and avoid frustration amongst those who lag behind. The problem is: lectures about new topics are always perfectly in time for the quick ones. If you are slower, you return to your unfinished work after listening to the new inputs. Thus the gap between the slow and the fast widens. Maybe there could be some extra - exercise for the quick or less work at all, so they quick can help the slower (like it was in the first week). During the second week there was a bit too much work to do I think.

It was really hard to check if everything works correctly using only those small plots! Maybe print them much bigger and add some numbers (max-min?) to make data more comparable. Also, if you suggest using different model versions, then plots for chemistry should also have different options, K value does influence the shape. But overall feeling is highly positive, thank you for the fantastic time!

Great crash course in atmospheric modelling that gave everyone a bit of everything. It meant that no matter your background you could take part and had to work a bit harder on the things you were not used to. I liked that it was not really in depth but gave a great over all understanding. Then it’s easy to go home and dig deep where it’s needed for your future.

I suggest to the course could have certain requirements to select participants.