DO THEY KNOW IT’S ...
... christmas time at all? We are not so sure this years, since the next proposal has us all in it’s grasp. But we think it will be worth all our time and that we have a successful 2020 to look forward to.

In this issue, you can read about the gender in science workshop with Prof. Schiebinger, our representation at the Frankfurter Buchmesse, the kick-off of the “Art&Science” project, Jonas talk at “Science goes public”, upcoming events, new publications as well as a scientific report from M1!

Enjoy!
Jennifer and Meike

RESEARCH WITH NUMBERS AND WATER: DO WE HAVE A GENDER DIMENSION?

In November 2019, the TRR 181 and the Cluster of Excellence CLICCS were proud to host Prof. Londa Schiebinger (Stanford University), the leading expert on gender and science, in Hamburg. One of the first results: No, we do not have a gender dimension in research, but does that mean we cannot think about it?

On Thursday, November 21, we started with a workshop for our current and future project leaders about the gender dimension in science. Prof. Schiebinger distinguishes between three levels of gender dimensions: 1. Fix the numbers of women, 2. fix the institutions and 3. Fix the knowledge. Her work focuses on the third dimension: How is gender influencing science and where do we have to watch out for this? Prof. Schiebinger started the workshop presenting her work on “Gendered Innovations” by providing the participants with some inspirational material for the following task: Does our very theoretical work have a gender dimension? The participants got together in two groups to discuss possible situations and areas were gender could have an impact on their research. First skeptical, the groups did came up with some ideas: Is it important to note if a male or female is taking or handling water samples? Does it matter if you tag male or female seals for measurements underneath the sea ice? An interesting discussion started that got everybody thinking.
In the end, we now know that most of our work does not have a gender dimension, but it was an interesting task to understand just how important gender is. Some of the ideas got Prof. Schiebinger very excited and might lead to future collaborations with our project. In the evening, Prof. Schiebinger held an evening lecture about “Gendered Innovations” to a university-wide audience.

On Friday, November 22, we repeated the Thursday workshop but with a broader audience of PhDs and Postdocs from all disciplines. Participants included geographers, neuroscientists, biomechanics, historians and IT-developers. The task done the day before showed that in other areas gender of the research subject or the researcher has a clear impact on the work done. The feedback of this workshop was overwhelmingly positive and we were showered with thanks for the organization. This was also the feedback for the Q&A with Prof. Schiebinger after the workshop. Participants could ask her questions about her career or opinion on gender issues. It was a very lively discussion and some of the participants networked afterwards to exchange further information or ideas on gender in science.

We like to thank Prof. Schiebinger again for her visit and her thought-provoking research. More on “Gendered Innovations” can be found on the website: genderedinnovations.stanford.edu

TRR181 @ FRANKFURTER BUCHMESSE 2019

Together with Springer Nature we organized a book presentation of our TRR book “Energy transfers in Atmosphere and Ocean” as part of the Springer-Buchreihe “Mathematics of Planet Earth” at the Campus Weekend of the Frankfurt Book Fair, the biggest Book Fair in the World.

Over 300,000 visitors have been at this years Frankfurter Buchmesse - we were one of them: Our PI Armin Iske (Universität Hamburg) and our Postdocs Rebecca McPherson (Universität Hamburg) and Stephan Juricke (Jacobs University Bremen) were invited to a panel discussion, together with Renate Bayaz from Springer Nature TRR outreach coordinator Jennifer Fandrich organized the event. After everyone has arrived in Frankfurt on Saturday, October 19 we met with Renate Bayaz and science journalist Mike Beckers from journal Spektrum der Wissenschaft, who moderated the the panel discussion: „Mit Mathematik das Klima besser verstehen - Veranstaltung zur Springer-Buchreihe “Mathematics of Planet Earth”.

The panel discussion was a full success: Every seat was taken and people were also standing in the back, approximately 100 visitors listened to the half-hour discussion. After the panel discussion the “Ask the Expert” event from 14.30-16.00 at the Springer Nature booth with our TRR Experts was very busy: A lot of interested people and students asked our experts about ways into climate related science studies with a mathematic background and discussed the importance of explaining climate research in the time of global protests.

We are very glad to be able to present our book and work within the TRR at the Book Fair and to be part of this event - it was a quite effective and at the same time fun way to connect to a science-interested public.

KICK-OFF ART & SCIENCE MEETING

End of October we met with two art students and discussed first ideas for our Art&Science Collaboration with Hochschule für Musik und Theater Hamburg at our Kick-Off in Hamburg.

Composer Pedro Gonzales and theater play director Meera Theunert met with interested TRR scientists and developed first ideas for the planned Art & Science Collaboration. It was a first meeting with a lot of short science talks and questions from Pedro and Meera. Now they develop first ideas in the field of music and theater to present at the review in March.

Thanks to everyone who joined and helped start this amazing process of finding a new way to communicate our scientific work to the general public.
OUR PI VALERIO LUCARINI AWARDED WITH EGU RICHARDSON MEDAL

The EGU has named the 49 recipients of next year’s Union Medals and Awards, Division Medals and Division Outstanding Early Career Scientist Awards. Our PI Valerio Lucarini is amongst them!

Our PI Valerio Lucarini was awarded with the Richardson medal. We asked him:

Valerio, you have been awarded with the Lewis Fry Richardson Medal. Could you tell us a little bit more about the nominating process?

Two senior colleagues formally nominated me, attaching support letters from five other senior scientists.

Is the Medal an award for a special scientific achievement?

The committee awarded me the medal for my research activities in the area of mathematics of climate, rather than for an individual result. My research work done in Hamburg at CliSap and then at TRR have been essential for achieving this, and I am very grateful for the opportunities UHH has given me in these years.

Congratulations to Valerio!

TALK AT EVENT SERIES SCIENCE GOES PUBLIC IN BREMEN

Our PhD student Jonas Löb talked about his PhD topic “Interne Wellen – Monsterwellen in der Tiefsee” in a pub in Bremen at event series SCIENCE GOES PUBLIC.

Entertaining science in 30 minutes. You want some exciting insights into unknown worlds? SCIENCE GOES PUBLIC! satisfies your thirst for knowledge. Original science topics are presented twice a year in selected pubs and bars in Bremerhaven and in Bremen in a humorous way - by scientists.

One of these scientists was our PhD student Jonas Löb from Bremen University. He held a talk and had luckily a very interested audience - people were standing outside to get in the pub. This shows how important these kind of entertaining outreach events are - because people are interested to know more about scientific topics.

We asked him some questions about the role of science communication and the connection of science and pubs:

What was the talk about?

The talk was about the fundamentals of internal waves. I basically tried to address my science for a public in a cozy and relaxing environment like a pub. I structured the talk in 3 sections. First, what are internal waves, where they are generated, and described their properties. The second part was about why are internal waves an important topic for scientist and what is the goal of our TRR181. In the last part I talked about how internal waves can be measured and how that exactly works on a research vessel.

What do you like talking about your science?

I do not necessarily like to talk about my science in public, but I see it as a kind of obligation which you have to do as a scientist. I think it is the right of every taxpayer to get also information about the knowledge we scientist create with their money and that this knowledge is not exclusively for other scientists. It also helps for the acceptance of science in the broader public in general, if everyone can access the information you can provide. Of course it is very nice to receive such nice feedback and appreciation.

For every interested scientists: How was the collaboration process: did someone approach you or was it through your initiative?

I got directly asked from our P.I. Maren Walter who was asked from the responsible for public relations at the MARUM at University Bremen. So it was more a coincident that I participated but I really enjoyed it and I can only recommend to do the same. Should anyone be interested in presenting themselves and their science, I am happy to pass this
What do you like most of about the connection of science and pubs?

Free drinks! Jokes aside, it was really nice to give a presentation in a such a different environment without any presentation. Not having any pictures, graphs or tables really motivates you to think about what exactly you want to tell, in which context and how you explain things in a way that everybody understands. This was also the biggest challenge, but a very interesting one whereby I learned a lot. Furthermore, people really listen to you. If you are on your standard conference the majority of the people is often not focused only on you and your talk. They work, write emails or run in and out all the time. In this format it is really only about you. Another thing I very much noticed is the diversity of the people who were there to listen to my talk. It is also not so bad if you make mistakes. Everybody just wants to know what you have to say, so they are very warm and friendly. And even if you make a mistake, nobody will notice, besides your colleagues ;).

Thanks to Jonas now science-interested people in Bremen know more about internal waves and the importance of fundamental research in this field. Well done!

UPCOMING EVENTS

January 16, 2020
TRR 181 Seminar
The seminar is held by Kesava Ramachandran (PhD in T1) at tbd, 2 pm.

January 23, 2020
TRR 181 Seminar
The TRR 181 seminar is held by Thomas Eriksen (PhD in W4) on January 16, 11 am at tbd.

January 28-31, 2020
Hamburg COMMODORE conference
The Hamburg COMMODORE Conference invites model developers working on all scales and compartments of the ocean, as well as applied mathematicians working on alternative discretisation techniques and/or simplified equation sets relevant to ocean modeling.

February 4, 2020
TRR 181 Seminar
The TRR 181 seminar is held by Evridiki Chrysagi (PhD in T2) on February 4, during the TRR 181 Winter School.

February 4-7, 2020
TRR 181 Winter School
Our annual Winter School is held in Ratzeburg.

February 26, 2020
First review rehearsal
The first rehearsal is held in Hamburg.

March 9, 2020
Final review rehearsal
The final rehearsal is held in Bremen.

March 18-19, 2020
TRR 181 Review
The review for the second phase is held in Bremen.

April 1, 2020
Gender Symposium „Equal opportunities during scientific careers”
The TRR 181 “Energy transfers in Atmosphere and Ocean” in collaboration with the International Research Training Group “ArcTrain” organizes a one-day symposium to raise awareness for these gendered dynamics and to foster a gender and diversity-sensitive approach to the promotion of early career scientists.
Have you also published your work, but cannot find it here? Please get in touch with the project coordination. Members of the TRR 181 are printed in bold.


Covariant Lyapunov vectors (CLVs) reveal the local geometrical structure of the system's attractor, thus providing valuable information about the basic dynamics. They are physically meaningful since they point into the directions of linear perturbations applied to the trajectory of the system. CLVs are linked to Lyapunov exponents, which describe the growth or decay rate of linear perturbations.

My name is Melinda Galfi, and I am a postdoc in the M1 subproject. I am continuing the work on CLV analysis started by Sebastian Schubert. I use the tangent linear version of the coupled atmosphere-ocean quasi-geostrophic model MAOOAM, and calculate the CLVs based on the so-called Ginelli method.

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