JCOM

CLIMATE SCIENCES MEET VISUAL ARTS

The visiting artist researcher experiment

Frauke Feser

Abstract

The visiting artist researcher experiment discussed here brought together visual artists and climate scientists, amongst them my research group which studies storms. The artists' stay led to a dialogue between our diverging perspectives and an open exchange of ideas. The exchange in my research group was more interactive than I had expected. Many conversations provided insights into ideas and work flows of the artists and, eventually, a new view on our storm studies.

Prologue

When I first heard about the Cluster of Excellence "Integrated Climate System Analysis and Prediction's" (CliSAP) visiting artist researcher programme, I immediately discarded the idea, giving it no subsequent thought. My impression was that this was some kind of obscure idea of my boss, the climatologist Hans von Storch (cf. his comment in this volume), a result of his strong engagement in debates on science and society. Later, more emails followed to promote the project. It was only on the last day of the application period that I suddenly, and rather coincidentally, started to think about the idea. And I concluded that this might indeed be not so bad after all. Thoughts of 'storm-art' entered my mind and finally some vision to exhibit a nice sculpture or painting to illustrate 'my storm research' emerged. Consequently, the representation of my scientific interests in the form of art grew to be of great appeal. I did not think much, however, about the process that would precede the final outcome at that time.

Stage 1

What followed was a rush of artists' applications for the storm group; obviously, many of them could imagine working on the storm topic. I learned from the organisers that out of 37 candidates, six were interested in working on storms. Two of the applications were selected for interviews and I was given the chance to comment on the proposals. Both projects looked very interesting to me. The first sketches of one proposal showed a mobile film studio which would enable an individual person to shoot spontaneously outdoors, for instance at the coast in case of a storm event. The other approach showed a kinetic picture generator. It consisted of transparent plastic slides which were assembled so that they would overlay each other and then, driven by small engines, produce a multitude of different pictures. The application dossiers also included examples of the artists'

earlier work. This, to my surprise, was a wide variety of art, ranging from sculptures, paintings, photographs to movies and performances. A movie of fog approaching land in the vicinity of San Francisco, particularly, gave me an idea of how a future piece of storm art could look. Luckily, we got support for both proposals. One was funded by CliSAP and the other one by the association of friends and former colleagues of our institute, the Helmholtz-Zentrum Geesthacht (HZG).

The project kicked off with a meeting at the University of Fine Arts in Hamburg (HFBK) at which the artists talked about their preparations and how they planned to become acquainted with their scientific topics. What impressed me most was the broad interest the art students showed in the natural sciences. Some of them started to read books on quantum physics or molecular biology in order to approach the different climate subjects investigated at the departments of the University of Hamburg, the Max-Planck-Institute for Meteorology and the Centre for Materials and Coastal Research at the HZG. Others also wanted to learn more about the past of their host institutions and, for instance, took part in a historical walk over the grounds of the institute.

Stage 2

It was then time for the first visit of the artists at our institute in Geesthacht, which is located about 40 km from Hamburg. A meeting brought together storm researchers and the two artists participating in the CliSAP project. The strong interest from both sides was evident from the many discussions, with lots of coffee, on art, natural sciences, or philosophy. Some conversations focused on inspiring persons like Bruno Latour, a sociologist of science and philosopher who works in the field of Science and Technology Studies. We showed the artists the figures that we use to analyse our climate model results (for an example, see figure 1).

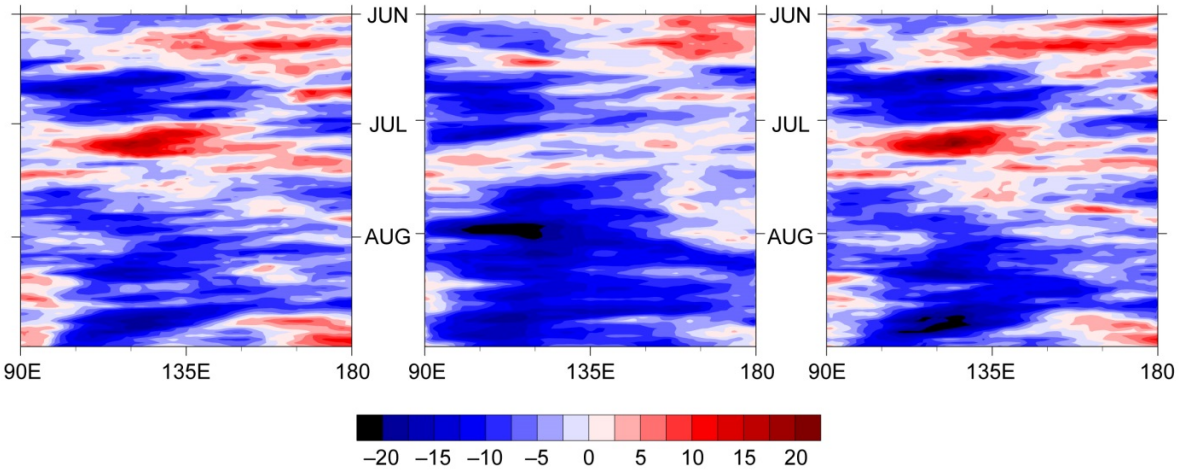

Figure 1. Hovmöller diagram of the Madden-Julian oscillation represented by zonal wind speed (m/s) at a height of 200 hPa for June, July, August 2004, averaged from 5°S to the equator. Shown are the National Centers for Environmental Prediction 'Climate Forecast System. Reanalysis' NCEP CFSR (left) as well as the regional climate model COSMO in CLimate Mode (COSMO-CLM) in standard configuration (middle) and COSMO-CLM using spectral nudging (right) ensemble means. Figure redrawn after Feser and Barcikowska (2012),

In the course of this, it became clear that scientists and artist have very different ways of looking at these plots. Where we scientists would look for interesting scientific outcomes and discuss how isolines and vectors could be scientifically interpreted, or even simply whether the model worked reliably, the art students saw patterns and geometric forms and asked why we selected a certain colour scheme.

The storm meeting took place in one of our seminar rooms and lead to a totally new art idea. The artists noted that the pragmatic room could do with some improvement, and developed an idea to build a new lamp that would provide better lighting and an improved working atmosphere. Another idea was to organise an 'institute storm' by exchanging the furniture of individual offices, even on different floors, in order to create chaos. Finally, I had to stop this idea from being realised (I doubt that my colleagues would have appreciated the art concept behind the plan). At this initial phase of the project, the art students changed their art ideas quite often, it seemed to me that a new idea came up every week, and was discarded shortly after. In science, it would be more unusual for this to happen so often, though of course, especially during the process of writing a PhD thesis, the whole concept normally changes at least once within a time period of about three years.

The artists visited many parts of our Institute for Coastal Research, such as the Cosyna show room where measurement data from the German Bight is graphically visualised on a number of screens. In our Institute of Materials Research, the magnesium composition part was most interesting for sculptors. We organised a visit of our now deactivated nuclear research reactor which was a good opportunity also for many scientific colleagues to see inside it for the first time. That one of the artists took photographs of the reactor's floor patterns strongly irritated some colleagues — again a distinctly different way to look at technical objects.

Stage 3

A (probably naive) view of storm art that I had in my mind was that of a ship battling a storm, high waves surrounding and crashing against it. This suggested a visit to our research vessel, named 'Ludwig Prandtl' after a renowned German physicist. A research trip from Glückstadt to Hamburg was scheduled for measurements of the river Elbe and its material and biological composition. On the date, however, dense fog prevented the Prandtl from approaching Glückstadt while the artists waited for hours to get on board. In the end, only some movie parts from a distance could be shot and maritime sounds from the harbour were recorded. The scene resembled the movie on fog approaching land close to San Francisco from one of the artist's applications. The visit was rearranged for another day, which fortunately had nice weather, but no storm in sight. A large number of research instruments are situated on the ship and photographs and sound recordings were made by the artists. The ship's engine and technical equipment led to new art ideas which transformed from storminess towards uncontrolled energy release.

Developments in this direction were fostered by a visit to the German Climate Computing Center (DKRZ). The DKRZ hosts the supercomputers that are needed for climate modelling and tape archives to store huge amounts of model data. The Center's visualization group illustrates climate model results mainly for scientific analyses, but for public relation purposes as well. Examples of data visualisation

combined with pictures of the robots which retrieve climate data archived on tapes added to a very technical viewpoint and a feeling of energy release (Figure 2).

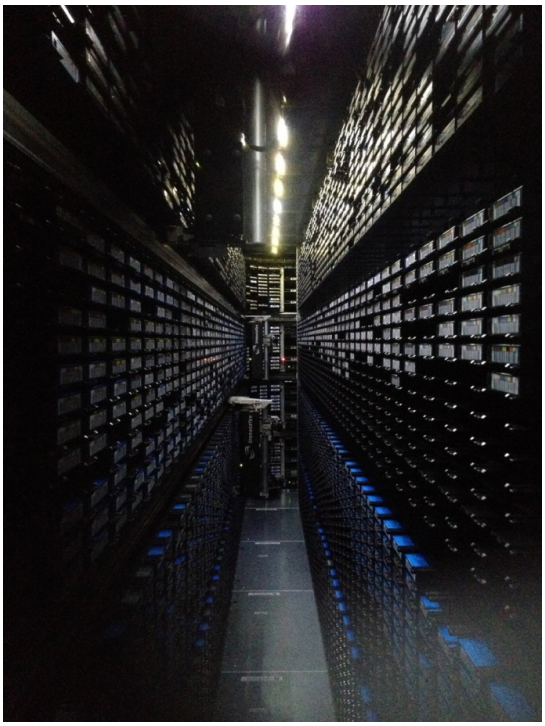

Figure 2. Tape archive at the German Climate Computing Center (DKRZ) © Alice Peragine.

Stage 4

After a couple of months of coastal research visits and sightseeing at various institutions our artists secluded themselves to take in the flood of information and impressions. All we heard was some news about other projects, exhibitions or performances that they had in the meantime. I enjoyed all of the pictures I got of different art works, like paintings, sculptures, or fountains of milk and honey. Most inspiring was the story about a performance which led random pedestrians to a newly opened art gallery by following rolled out nonwoven fabrics which resembled in colour and texture the gallery's walls.

My impression is that the artists enjoy a varied working life with international exhibitions, journeys, and the ability to work on many different projects. In science, there are also many conferences and workshops, but to me the range of topics that any one researcher explores seems to be more restricted. For example, within the period of the arts project, my business trips were the following: Lübeck, Berlin, Bad Salzschlirf, Lund, and Lisbon while 'our' art students went to Bremen, Hildesheim, Zurich, St. Petersburg, Moscow, and New York.

Near the end of the project, I was provided with some final sketches of the pieces of art. From those I got a vague idea of the outcome, but was still very curious. I got to see the results for the first time at the occasion of the finissage at the HFBK. The art students presented their work and explained the work flows and what led to the results. A live VJ-performance showed the rhythm, the flow, and chaotic patterns of energy release via looped photographs and acoustic material and created a very stimulating atmosphere. A picture series and its production process combined

various features, like Darwinism, randomness, chaos, evolution, and subjective selection which can be transferred to many science tasks (Figure 3).

Figure 3. Schümeyer (Hagen Schümann, Felix Meyer Wolters), "Komp. 1–10", 2014 (Installation view HFBK Hamburg).

Closing remarks

What I found most intriguing about the experiment were the discussions and the insight and new ideas provided by meeting the artists. In some respect, art and the natural sciences have a lot in common. On the one hand, both realms allow for very creative working conditions which can be very satisfying. But on the other hand, uncertainty with regard to future job opportunities characterises both fields. Interestingly, the artists seem to handle this uncertainty quite differently from what I observe among our students and junior researchers who often worry about their future as most jobs are limited to short time periods. Many art students said that they were positive about their future, and that somehow they would manage to make a living. This I think is quite a remarkable approach from which lessons can be drawn, like to think less about the future and to be more relaxed.

My conclusion is that this project was far more interesting than I expected it to be, especially the conversations with the artists. In the end the outcome, the 'art product', became less important while the encounters with art and the artists enriched my science work. This happened in a more general way that led me to see my scientific problems in a broader, maybe more creative context. New questions arose like why a certain task is done as usual instead of looking for new possibilities. The artists were attentive observers, who challenged established working processes and forced me to reconsider and to explain my work more clearly.

Author

Frauke Feser obtained her diploma in meteorology in 1998 from the University of Hamburg, Germany. She started her work at the Helmholtz-Zentrum Geesthacht in 1999 and finished her Ph.D. on "Spatial Scale Separation in Regional Climate Modelling" in 2005. Now she is the coordinator of storm themes at the Institute for Coastal Research at the Helmholtz-Zentrum Geesthacht, specialising in extra-tropical storms in temperate zones, tropical cyclones such as typhoons and smaller-scale storms like polar lows or medicanes. E-mail: frauke.feser@hzg.de.

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