

WATENV Newsletter

No. 3 July/August 2013



Dear WATENV alumni and friends,

summer has finally reached Hannover and we have been enjoying lots of sun for many weeks now!
A perfect holiday time for our students and a warm welcome for our new DAAD scholarship holders,
who are arriving around this time!

Best greetings,
Eva Starke (WATENV course manager)



Summer in Hannover:
WATENV students in the park of the New Town Hall

WATENV NEWS

New scholarship record

For this year's intake, 17 scholarships have been awarded for prospective WATENV students within the programs of the German Academic Exchange Service (DAAD) and the World Meteorological Organization (WMO).

Curriculum

A new module will be offered this coming winter semester within the WATENV curriculum:

„Hydropower Engineering“, taught by lecturers of the Franzius Institute for Hydraulic, Waterways and Coastal Engineering and the Institute of Geotechnical Engineering. In this course, students will acquire extended knowledge about weir and dam construction as well as subsoil sealing. Planning, designing and dimensioning of hydro dams and their foundations and the use of hydro power in coastal areas will also be part of the training.

Since this summer semester, a module on „Wetland Ecology and Management“ adds to the electives. This course covers various ecological aspects such as wetland hydrology, biogeochemistry, and biological adaptations, as well as management issues such as wetland restoration, treatment wetlands, and wetland protection.

RECENT STUDENT ACTIVITIES

Visit to water fair in Berlin

In April, some WATENV students visited the Berlin Wasser International 2013, a trade fair and congress about innovations and new perspectives in water-related areas. Carlos Lizarazo Rincon, a second semester WATENV student from Colombia, shares in his report what he was impressed by most:

During the Wasser Berlin International 2013 exhibition, held in Berlin from April the 23rd to 26th, 2013, two innovative solutions sponsored by the German Ministry of Education and developed by Aerzener Maschinenfabrik GmbH and Semizentral Germany were presented to the public at the dynamic modern stand of this governmental entity.

The first developer presented Complex – an efficient way to clean pipelines. This project responds to the need of having operative pipelines over time even for drinking water or wastewater systems. The continuous deposition and accumulation of sediments present in these waters along the pipe cross-sectional area during their normal functioning, obliges water operators to find solutions for removing these “barriers” of the flow. Likewise, these layers are also latent sources of pollution that may diminish the quality of drinking water, as well as being a latent risk of bursting and failure of the pipelines.

The idea consists of applying pulses of air pressure, up to 4 bar (Aerzener, 2013), to a certain amount of water within the pipelines during a period of time. The amount of water depends only on the pipe diameter and in average it is just 83% of the amount used in conventional flushing systems (Aerzener, 2013).

The reduction of water and its cleaning performance make Complex an efficient process that considers both the integrity of pipeline systems and the environment, as well as saving cost during operation.

On the other hand, Semizentral Germany presented an interesting research project carried out in China by two PhD students of the Technische Universität Darmstadt, whose final goal was to assess and demonstrate that semicentralized treatment plants are suitable for fast-growing urban areas.

One of the findings of this project was that having just one wastewater treatment plant outside of a city is not enough for treating the amount of wastewater generated by the community. There could be a possibility to have limitations due to capacity constraints, as well as a reduction in the effectiveness of treatment due to the fast growth rate of population and urban expansion.

Urban planning makes possible to foresee the expansion areas of a city, thus semicentralized treatment plants may be built in neighborhoods as a solution for treating wastewater at low cost. Likewise, this semicentralized treatment of wastewater will decrease the drawdown generated by the overexploitation of groundwater. The drawdown would decrease since gray wastewater could be reused after being treated. The reuse of gray wastewater depends only on its separation from black wastewater, and this is possible by having separate pipeline systems to collect them.

Depending on the financial resources available for this purpose, semicentralized treatment plants may be built at or below ground level. Plants built below ground level could be also recreational areas for people, for example: parks.

Finally, this initiative shows that by planning the expansion of a continuous growing city, it is possible to ensure a sustainable use of water. This would benefit the community by reducing wastewater treatment costs and ensuring quality of life, as well as the environment due to correct usage of the natural resources, reducing the probability of going through situations of scarcity.

International Day at Leibniz Universität Hannover

The first INTERNATIONAL DAY has been organized by the International Office in June. The event took place in the university's main building, the Welfenschloss. Many students of different countries participated in the entertaining and colorful afternoon with food & drinks, cultural specialties, and music & dance, followed by a karaoke party.



WATENV students at the International Day: Solomon and Dagmawi from Ethiopia (left), Zaw from Myanmar, Carlos from Colombia, and Ravi and Ranila from Nepal.

...more RECENT STUDENT ACTIVITIES

Excursion to the Klimahaus, Bremerhaven

This summer's cultural excursion took us to Bremerhaven, a city in Northern Germany, where we visited the Klimahaus ("house of climate"). A report by Katrina Mariner, 4th semester WATENV student:

The visit to the Klimahaus was an intriguing experience for all participating students.

The Klimahaus showcases an interactive journey following the 8 degrees longitude line from Bremerhaven all around the world to different countries. Those exhibited included Switzerland, Italy, Niger, Cameroon, Antarctica, Samoa and back to Germany.

These country exhibits gave each person a first-hand experience of different places, the temperature, the culture, daily life in each different country and much more.

The temperature through each exhibit changes dramatically, so you can go from -6 degrees Celsius in one place to 27 degrees in the next. The daily living in each country was very different in each country exhibited, e.g. constant struggle for water in the desert of Niger, the beautiful rainforest of Cameroon with electric catfish (don't put your hand in the water unless you want an unpleasant surprise), the beautiful Swiss alps, the cold continent of Antarctica with ice everywhere and sunny Samoa.

There were more exhibits which showcased the transformation of the earth from volcanic eruptions, to the ice age and all the way to the present and future climate predictions. This part of the journey was awe-inspiring and thought provoking, you get to see the world in its early stages, and then get a view of what the future would be like given the current trajectory of climate change.

The most fun experience was at the reptile exhibit, which showcased dinosaurs and different reptiles. We got to see live snakes, turtles, frogs, lizards and even a hungry alligator and much more. It was amazing and you never run out of things to look at, there was always something lurking in the corner waiting to be discovered. Overall, the experience was fascinating and highly recommended for future students, thank you WATENV for giving us students the opportunity to experience the Klimahaus, we thoroughly enjoyed our time there and have many great memories.



WATENV students at the bridge to the Klimahaus, huge grasses and insects, a tent in the Antarctica exhibition

A Samoan exploring the Samoan Exhibit

(..as Katrina is from Samoa, we were very curious about how she liked the exhibition of her home country!)

Talofa lava! (Hallo!), I found the Samoan exhibit strangely welcoming. The temperature was set to 28 degrees so you get a good idea of how warm Samoa is and I start wondering why am I wearing a sweater, forgetting for a second that I was not actually in Samoa. Seeing video footage of home in the surrounding scene that reenacted daily life in Samoa was mesmerizing. The most interesting part of my day was finding out that the Vanya that was mentioned in the introduction was indeed an old friend. This reminded me very much of a common island saying, „Samoa is a very small place on the map and everyone knows everyone, welcome to Island life!' The church, canoe and fale'o (beach hut) in the Samoan exhibit was built by my friend Vanya, his Dad and a couple of carpenters. The church itself is a small replica of a church in Aleipata on Upolu Island in Samoa, and the hut is a common feature on the Samoan beaches and rural villages, and ofcourse the canoe is used to catch fish daily and for recreation in Samoa. Looking at the aquarium display of tropical fishes, I was actually remembering how we cook the different types of fish back home e.g. with coconut cream or in an earth oven (umu) or even raw (oka). All this meant something really special to me, to see a touch of home on this side of the world is incredible and one of my most memorable experiences in Germany.

Manuia le aso (Have a nice day).



Katrina (right) and Seema in a typical Samoan hut

...more RECENT STUDENT ACTIVITIES

Reflections on student life in Hannover (by Ross Pidoto, Australia)

It's been close to a year since the 2012 WATENV students began their studies here in Germany. I would like to share with you some of my experiences of this time.

Before arriving in Hannover, I knew very little about the city itself except that it hosts CeBIT and once shared a King with England! Thankfully I was pleasantly surprised by the city and the lifestyle it offers, in particular to its students.

For me, the number one highlight of the city is its parks. Luckily, with the university being located so close to beautiful gardens such as the Herrenhausen Gardens, I am able to enjoy the gardens almost on a daily basis. When the sun is shining it's truly a joy to enjoy a BBQ with others or to take a jog through the gardens. The Maschsee Lake with the majestic New Town Hall as a backdrop is another favourite spot to spend a sunny day and enjoy an icecream.

One difference between Germany and all of our home countries is the climate. For all of us students within the course, the sight of snow is definitely a new experience! We were lucky to have some good snowfall before Christmas which added to the atmosphere of the Christmas Markets. The Christmas Markets are an absolute highlight of Germany, which brings together the whole community to make the cold winter that little bit easier to bear!

Another big difference between Germany and my home country of Australia is the transport. Hannover itself has outstanding public transport, and train connections to other parts of Germany are excellent due to Hannover's central location. Berlin, Hamburg and Cologne are all within three hours train ride. Our semester ticket allows us to travel right throughout the state of Lower Saxony at no cost. This opens up many sightseeing opportunities, from the nature of the Harz Mountains to scenic historic towns such as Hamelin (home of the Pied Piper!) and even major cities like Hamburg and Bremen. The cycling infrastructure within Hannover is also light years ahead of what I am used to back home and as a keen cyclist I almost exclusively travel within the city this way.

The WATENV course brings together resources and expertise from many different institutes across the university. One clear advantage of this is that we are able to specialise in an area that suits us best for our Master's thesis.

I was often asked back home why I was coming all the way to Germany to study, but I couldn't recommend the opportunity any higher for the great mix of learning and lifestyle it offers.



WATENV BBQ at the Herrenhausen Gardens, Hamelin, Maschsee Lake, bog path in the Harz mountains

Alumni portrait: Ana Callau, Argentina

Ana graduated in 2012 with a major in Water Resources Management. She wrote her Master Thesis at the Institute for Water Resources Management, Hydrology and Agricultural Hydraulic Engineering, and continued after graduation as a PhD student.

She is currently working in the SYNOPSE project, a project involving several German universities (Leibniz Universität Hannover, Universität Stuttgart and Universität Augsburg), as well as state companies (Hamburg Public Sewage Company, Stadtentwässerung Braunschweig and Stadtentwässerung Freiburg) and some private enterprises.

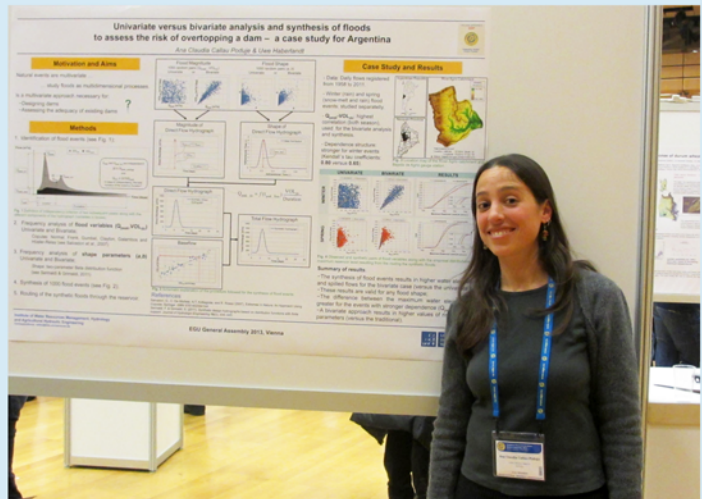
The goal of the project is the development of stochastic precipitation models to generate synthetic rainfall series, and to apply them for the modelling of sewer systems in different cities in Germany (Hamburg, Braunschweig and Freiburg). By analyzing past, present and future development scenarios, the sewer network belonging to these cities can be better planned and optimized.

Ana's role in this project is to develop a Precipitation Model by using and processing observed rainfall data and other additional data sources. The parameters of the model have to be regionalized for the areas without observations. The result will be synthetic rainfall time series, one reproducing the current climate and another representing a possible future climate. "The main idea is to develop a technique of generating rainfall using the existing measured station data, and to transfer this technique to any other region. Some regions in Germany will be studied for this purpose", Ana explains.

She says that she can directly apply the contents learnt in many WATENV modules to her current research, especially Environmental Data Analysis (Statistics), Hydrology & Water Resources Management II (Precipitation Models) and Hydrological Modelling (Geostatistics).

"Through the WATENV program I met new colleagues from Africa, Asia, Latin America and Europe, we are in contact to support each other with any professional issue or whenever some job opportunity arises ...
..but most important of all ...
I made really good new friends for life!"

If you would like to get in contact with Ana or find out more about her work, please visit the institute's website at:
<http://www.iww.uni-hannover.de>



Ana presenting the results of her WATENV Master Thesis at the European Geophysical Union (EGU) General Assembly 2013 in Vienna.

Upcoming events

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| 12.08.2013 | Excursion to Europe's largest fish pass in Geesthacht, organized by the Inst. for Water Resources Management |
| 19.-23.08.2013 | IAHS/DHG Summer School on Copulas for hydrological applications, Leibniz Universität Hannover |
| 24.08.-01.09.2013 | IdeenExpo, incl. stand of the Faculty of Civil Engineering and Geodetic Sciences, Fairground Hannover |
| 13.-15.09.2013 | CIM „Returning experts“ seminar for students and graduates from Peru and Colombia, Bonn |
| 23.09.2013 | WATENV graduation 2013 |
| 03.-11.11.2013 | DAAD Alumni Summer School "Agricultural Technology and Engineering in Developing Countries", Witzenhausen |
| 29.11-01.12.2013 | CIM „Returning experts“ seminar for students and graduates from Ghana and Cameroon, Heidelberg |

Thanks again to all who contributed to this newsletter.

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